This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

PROPERTY OF THE
PUBLIC LIBRARY OF THE
CITY OF BOSTON,
DEPOSITED IN THE
BOSTON MEDICAL LIBRARY.

★3746
2

+ 3756.1

Accessions
192945

Shelf No.
★ 3756.1

1845
Vol. 26

Received Feb. 14. 1876

THE FRANCIS A. COUNTWAY LIBRARY OF MEDICINE
HARVARD MEDICAL LIBRARY-BOSTON MEDICAL LIBRARY

THE

TRANSACTIONS

OF THE

AMERICAN

MEDICAL ASSOCIATION.

INSTITUTED 1847.

VOL. XXVI.

BOSTON, MA

NOV 01 2003

PHILADELPHIA:
PRINTED FOR THE ASSOCIATION.
COLLINS, PRINTER, 705 JAYNE STREET.
1875.

192.945

By a Resolution passed at the session of 1851, the Committee of Publicatio were instructed to print conspicuously, at the beginning of the volume of th *Transactions*, the following disclaimer:—

"The American Medical Association, although formally accepting and publishin the Reports of the various Standing Committees, holds itself wholly irresponsibl for the opinions, theories, or criticisms therein contained, except when otherwis decided by special resolution."

CONTENTS.

PAGE

Minutes of the Twenty-Sixth Annual Meeting of the American Medical Association 9
Statement of Committee of Publication 53
Report of the Treasurer 54
Report of the Librarian 55
Catalogue of Library 57
Address of W. K. Bowling, M.D., President of the Association . . . 65
Minutes of the Judicial Council 81
Minutes of the Section on Practical Medicine, Materia Medica, and Physiology 87
Address on Practical Medicine 111
Report on the Necessity for Coincident Clinical and Meteorological Observations and Records in the Study of Etiology; and on the Influence of atmospheric conditions in the Development of Bowel Affections of Children . 125
A Case of Cystic Degeneration of the Kidneys, with Remarks. By John A. Octerlony, A.M., M.D. 133
Some Practical Observations on Exophthalmic Goitre, and its Treatment. By Roberts Bartholow, A.M., M.D. 145
Notice of the Bioplasson Doctrine. By Louis Elsberg, A.M., M.D. . . 157
Minutes of the Section on Obstetrics and Diseases of Women and Children 169
Address in Obstetrics and Diseases of Women and Children. By Wm. H. Byford, A.M., M.D. 173
Pigmentation—A Rare Disease among Infants. By M. B. Wright, M.D. . 195
Minutes of the Section on Surgery and Anatomy 219
Some Results of Operative Surgery in the Lake States, differing from the Statistics from other Regions. By E. Andrews, A.M., M.D. . . . 247
Spinal Anæmia with Partial Paralysis and Want of Co-ordination, from Irritation of the Genital Organs. By Lewis A. Sayre, M.D., of New York . 255
Exstrophy of the Bladder. By C. B. King, M.D., of Pennsylvania . . 275
Hydro-Nephritis Caused by the Formation of Stones in the Pelvis of the Kidneys. By Leon J. Wilien, M.D., of Indiana 279
On Auscultation of the Œsophagus. By Louis Elsberg, M.D. . . . 283
Ovarian Tapping followed by a Cure. By E. H. M. Sell, A.M., M.D., of New York 287
Minutes of the Section on State Medicine and Public Hygiene . . . 291
Annual Address in State Medicine and Public Hygiene. By Henry I. Bowditch, M.D., of Massachusetts 301

Prof. H. P. Bowditch's Plan for Recording Certain Data Relative to the Growth of Children of Different Nationalities in order to Illustrate perhaps the Influence of our Climate, etc. . . . . .
Hemlock Poisoning. The Case of F. W. Walker, Brooklyn, April 3, 1875. Summarized by A. N. Bell, M.D., of the Coroner's Jury . . . .
Climatology and Diseases of Nebraska. By James H. Peabody, M.D. . .
Diseases of Minnesota and the Northwest. By D. W. Hand, M.D., of St. Paul. . . . . .
Partial Report of Committee on Ventilation . . . . . .
Climatological and Sanitary Report of Florida. By John P. Wall, M.D., of Tampa . . . . . .
A Discourse on Bloodletting Considered as a Therapeutic Agent. By S. D. Gross, M.D., LL.D., D.C.L. Oxon. . . . . .
Memoir of Henry Miller, M.D. . . . . .
Memoir of Geo. Mendenhall, M.D. . . . . .
Report on American Medical Necrology . . . . . .
Plan of Organization . . . . . .
Code of Medical Ethics . . . . . .
Officers . . . . . .
Permanent Members . . . . . .

MINUTES

OF THE

TWENTY-SIXTH ANNUAL MEETING

OF THE

AMERICAN MEDICAL ASSOCIATION,

Held in the City of Louisville, Kentucky, May 4th, 5th, 6th, and 7th, 1875.

THE Association assembled at Public Library Hall, on Tuesday, May 4th, at 11 A.M., and was called to order by Dr. EDWARD RICHARDSON, of Kentucky, Chairman of the Committee of Arrangements.

He introduced Rev. J. S. LAMAR, of Louisville, who offered a prayer.

The President, Dr. W. K. BOWLING, of Texas, occupied the chair, supported by Vice-Presidents Dr. WM. BRODIE, of Michigan, Dr. J. J. WOODWARD, U. S. A., and Dr. H. D. DIDAMA, of New York. The Permanent Secretary, Dr. WM. B. ATKINSON, of Pennsylvania, and the Assistant Secretary, Dr. WILLOUGHBY WALLING, of Kentucky, were at their posts.

Dr. RICHARDSON addressed the Association as follows:—

Mr. President and Gentlemen of the American Medical Association:

It is with great pleasure that I attempt to fulfil the duty assigned me of bidding welcome to the American Medical Association upon the present occasion of its assembling in this city.

In behalf of the medical profession and the citizens of Louisville, as well as of the State of Kentucky, I desire to express the high gratification we experience in being honored by the presence of so many distinguished gentlemen from distant regions, met for the advancement of the medical science, and for the pro-

motion of the highest interests both of the profession and of t community.

In these most worthy purposes the faculty of this city, and the entire State, most warmly sympathize, and are happy extend to you all a most cordial greeting, as well as to proffer you the most earnest co-operation in your useful labors.

It is to us, Mr. President, in presence of so many eminent mer bers of the profession here assembled, a source of congratulatic that our State herself has not been unknown to medical annal and that she may justly assert the distinction of having been th first to introduce into successful practice several of the most in portant and beneficent operations of surgery, now widely know and fully appreciated, both here and in foreign lands. The name of her Brashear, her McDowell, her Briggs, her Dudley hav with those of others, been placed high upon the roll of fame a original and independent thinkers and workers, who have deserve well of their compeers in the healing art; and it is, Mr. Presi dent, a grateful, if it be even but a fond imagining that thei revered shades are now here present with us, to do honor to thi occasion, and to enhance our welcome by the addition of thei own. Nor would it be improper, Mr. President, if our State shoul institute also a claim, in part at least, to more than one of th distinguished gentlemen who are now enrolled as Eastern mem bers of the American Medical Association.

The eminent writers and practitioners to whom I allude wer formerly citizens of Kentucky, and in this city of Louisville were for no inconsiderable period, fellow-laborers with the faculty o our medical institutions in furthering the cause of medical science They have, it is true, transferred the scene of their successes tc another portion of our country. Reversing the usual order of the celestial bodies and the usual course of empire, they have moved from the West to the East, where they now continue to shine in the medical firmament with ever-increasing splendor.

But Kentucky is far from relinquishing her vested rights, her priority of possession in them, and it is, therefore, with the most lively satisfaction that the faculty and citizens of Louisville welcome again, even for a brief sojourn, their former associates, expressing the hope that the renewal of ancient friendships and the cherished reminiscences of the past may add their enjoyments to those of the present, and render their stay with us as agreeable

to themselves as it will most assuredly be to their numerous friends in this city.

It is probable, however, Mr. President, that the larger portion of the membership of the Association have now for the first time visited our State. Allow me to say to these that it is for the *stranger* that our State ever accords a peculiar welcome, and that it is in her "Old Kentucky Home" that she loves to dispense the grateful tribute due to the eminent in science and to the public benefactors of society who honor her with their presence. In her name I heartily welcome you to her borders and her hospitalities, and in her behalf, and that of the profession and the citizens of Louisville, tender once more to the members of the Association, one and all, the best wishes for their happiness in our midst, and for the most propitious results of their deliberations upon the important matters for which they are now convened.

He then announced the following programme:—

Sessions to convene at 9½ A. M., and adjourn at 1 P. M.

Sections convene at 3½ P. M., in their appropriate rooms.

Receptions and Entertainments.—The delegates and their ladies are invited to a public reception at the Galt House, given by the physicians of Louisville, on Tuesday evening at 9 o'clock.

On Wednesday, private receptions will be given by Dr. and Mrs. J. LAWRENCE SMITH, Dr. and Mrs. J. R. BUTLER, Mr. and Mrs. JAMES TRABUE, Dr. and Mrs. D. W. YANDELL, each from 8 to 12 P. M.

Thursday by Capt. and Mrs. JAMES F. IRWIN, 4 to 7 P. M., Mr and Mrs. Jos. T. TOMPKINS, 8 to 11 P. M., and Mr. and Mrs. ISAAC CALDWELL, 8 to 12 P. M.

Friday by Mr. and Mrs. J. WATTS KEARNEY, and Mr. and Mrs. JAMES G. CARTER, each from 8 to 12 P. M.

On Friday, Col. JNO. B. MCFERRAN desires a visit of the Association to his stock farm.

Invitations were also tendered by various charitable and other institutions.

The report was received and adopted.

He presented the following list of registered delegates and permanent members:—

ALABAMA.

State Medical Society,	JAMES S. BANKSON, RUFFIN COLEMAN, GEORGE E. KUMPE.
Med. Soc. of Northern Alabama,	WM. C. CROSS.
Medical and Surgical Society of Montgomery,	WM. O. BALDWIN, SAMUEL D. SEELYE.

ARKANSAS.

State Medical Society,	THOMAS SMITH.
College of Physicians and Surgeons, Little Rock,	P. O. HOOPER, JAMES H. LENOW.
Little Rock and Pulaski County Med. Soc.,	JAMES A. DIBRELL, JR.
Permanent Member,	D. A. LINTHICUM.

COLORADO.

Territorial Medical Society,	CHARLES DENISON.

CONNECTICUT.

State Medical Society,	LEWIS WILLIAMS.
New Haven County Medical Society,	BENJAMIN H. CATLIN, CHARLES H. PINNEY.

DISTRICT OF COLUMBIA.

Medical Association of D. C.,	SAMUEL C. BUSEY, JOHNSON ELIOT, WM. H. ROSS, W. H. TRIPLETT, JOSEPH MEREDITH TONER.

FLORIDA.

State Medical Society,	E. T. SABAL.

GEORGIA.

State Medical Society,	ROBERT BATTEY, THOMAS S. HOPKINS, E. J. KIRKSCEY, R. H. LEWIS, WILLIAM ABRAM LOVE.

ILLINOIS.

State Medical Society,	NATHAN S. DAVIS, J. B. FELKER, VINCENT L. HURLBUT, H. H. LITTLEFIELD.
Æsculapian Society of Wabash Valley,	W. M. CHAMBERS, J. M. MCKOWN, J. D. MITCHELL, G. T. RAGAN, L. J. WILLIEN.
Champaigne County Med. Soc.,	J. T. PEARMAN.
McDonough County Medical Soc.,	SAMUEL F. SANDERS.
Peoria City Medical Society,	J. PERRIN JOHNSON, JOHN L. HAMILTON.
Wabash District Medical Society,	JACOB HAYS.
Warren County Medical Society,	W. S. HOLLIDAY.
Permanent Members,	EDMUND ANDREWS, WILLIAM H. BYFORD, JOSEPH O. HAMILTON, G. W. HEWITT, H. A. JOHNSON.

INDIANA.

State Medical Society,	S. P. COLLINGS, W. J. ELSTUN, J. M. GRAY.
Allen County Medical Society,	GEORGE T. BRUEBACH, T. J. DILLS.
Blackford County Medical Soc.,	R. P. DAVIS.
Dearborn County Medical Society,	C. B. MILLER, WILLIS E. SUTTON, H. C. VINCENT.
Drake Academy of Medicine,	C. P. BACON, GEORGE F. CENTER, CYRENIUS ELLIOTT, H. G. JONES, E. LINTHICUM, W. R. MCMAHAN, S. E. MUMFORD, S. H. PEARSE, JOHN W. PUGH.

Drake Medical Society,	NATHAN MENDENHALL,
	WM. H. SHULSE.
Dubois Co. Medical Society,	J. H. BRYANT.
Elkhart County Medical Society,	R. J. HAGGARTY,
	J. A. WORK.
Fort Wayne Medical Society,	A. D. EMANUEL.
Fountain and Warren County Medical Society,	THOMAS F. LEECH.
Grant County Medical Society,	EZRA K. FRIERMOOD,
	WILLIAM LOMAX,
	LEWIS WILLIAMS.
Greene County Medical Society,	T. A. CRAVENS,
	JOHN W. GRAY.
Hamilton County Medical Society,	WM. B. GRAHAM,
	JAMES J. ROOKER.
Howard County Medical Society,	WM. SCOTT.
Indianapolis Acad. of Medicine,	HENRY JAMESON,
	W. B. MCDONALD,
	A. W. PATTERSON,
	A. STRATFORD,
	J. C. WALKER.
Jefferson County Medico-Chirurg. Society,	WM. A. COLLINS,
	C. H. WRIGHT.
Miami County Medical Society,	JOHN H. HELM.
Mitchell District Medical Society,	HARVEY H. CHASE,
	L. A. CRIM,
	DAVID J. CUMMINGS,
	JAMES W. F. GERRISH,
	BENTON J. HON,
	H. L. KIMBERLIN,
	E. D. LAUGHLIN,
	L. T. LOWDER,
	J. W. NEWLAND,
	SAMUEL A. RARIDAN,
	JOSEPH A. STILWELL,
	M. V. WILSON.
Montgomery County Med. Society,	S. W. PURVIANCE.
New Castle Medical Association,	WALTER A. BOOR.
Rush County Medical Society,	JOHN ARNOLD,
	MARSHALL SEXTON,
	WM. A. PUGH.

St. Joseph Valley Medical Soc.,	LOUIS HUMPHREYS.
Wabash County Medical Society,	HENRY ADER, R. F. BLOUNT.
Wabash District Medical Society,	F. W. BEARD, S. W. PECK, J. M. RUNYAN.
Permanent Members,	J. A. ADRIAN, JOS. R. BECK, A. F. BERRY, H. W. CLARK, E. H. CRIPPEN, JOSEPH EASTMAN, J. S. GREGG, M. H. HARDING, JOHN M. KITCHEN, W. K. MAVITY, G. D. MEARS, EDWARD MURPHY, W. H. MYERS, BENJ. NEWLAND, THEOPH. PARVIN, JOS. W. RAWLINGS, JOHN REA, JOS. G. ROGERS, ISAAC M. ROSENTHAL, THAD. M. STEVENS, G. SUTTON, R. N. TODD, W. W. VINNEDGE, DAVID WALL, L. D. WATERMAN, J. H. WOODBURN, B. S. WOODWORTH.

IOWA.

Iowa Central Medical Association,	GEO. W. CARTER.
Scott County Medical Society,	JOSEPH GAMBLE.
Wapello County Medical Society,	J. WILLIAMSON.

KANSAS.

State Medical Society,	C. C. FURLEY, C. V. MOTTRAM.

KENTUCKY.

State Medical Society,	J. BAKER, J. T. BERRY, G. D. BUCKNER, R. O. COWLING, C. S. FENNER, T. J. GRIFFITH, LEWIS A. GRIMES, W. M. HANNA, R. C. HEWETT, JAMES M. HOLLOWAY, D. JOHNSON, JAMES M. KELLER, JAMES KNAPP, J. A. LARRABEE, W. H. LONG, JAMES LOWRY, HUGH F. MCNARY, W. TALBOT OWEN, C. W. PARSONS, D. N. PORTER, DUDLEY S. REYNOLDS, COLEMAN ROGERS, JOSEPH SMITH, J. P. THOMAS, PINCKNEY THOMPSON, J. W. THOMPSON, D. D. THOMSON, CHAS. H. TODD, S. S. WATKINS, F. C. WILSON, L. P. YANDELL, SR.
Central Kentucky Medical Assoc.,	H. BROWN, A. D. PRICE, S. L. S. SMITH.

Southwestern Kentucky Medical Association,	J. G. Brooks, James A. Carr, Thomas H. Hood, R. J. Howard, W. D. Kirkpatrick, L. M. Lovelace, D. A. Maxwell, N. J. Paschall, R. Saunders, J. W. Singleton, B. F. Spencer.
Boyle County Medical Society,	L. S. McMurtry, Alf. B. Nelson.
Clarke County Medical Society,	H. Taylor, S. W. Willis.
Franklin County Medical Society,	M. E. Poynter, W. B. Rodman.
Henderson Medical Society,	Thomas W. Taylor.
Licking Valley Medical Association,	H. G. Allen, D. Keller.
Lincoln County Medical Society,	S. P. Craig.
Louisville College of Physicians and Surgeons,	Turner Anderson, Wm. Bailey, D. W. Yandell.
Louisville Medico-Chirurg. Soc.,	Wm. Forrester, E. S. Gaillard, C. W. Kelly.
Louisville Obstetrical Society,	Samuel Brandies, John A. Octerlony.
McDowell District Medical Soc.,	O. L. Drake, J. Hale, J. A. Hodge, N. A. Ketchell, James Hughes Letcher, John E. Pendleton, J. W. Pritchett, T. J. Shoemaker, A. C. Wood.
Pulaski County Medical Soc.,	George Perkins.

Shelby County Medical Society,	R. F. Logan, Dennis O'Nan.
Warren County Medical Society,	H. P. Cartright, S. W. Coombs, Richard C. Thomas.
Permanent Members,	Jonathan R. Bailey, J. M. Bodine, D. D. Carter, John Dillard, R. W. Dunlap, R. H. Gale, John D. Jackson, Charles Mann, W. U. Martin, Edward R. Palmer, Edward Richardson, Henry M. Skillman, O. D. Todd, L. Beecher Todd, Edward Von Donhoff, Willoughby Walling, L. P. Yandell, Jr.

MARYLAND.

Medical and Chirurgical Faculty,	E. Lloyd Howard, Jno. Morris, H. T. Rennolds.
Permanent Member,	Ninian Pinkney.

MAINE.

State Medical Society,	S. M. Weeks.
Androscoggin Co. Medical Society,	Alonzo Garcelon.

MASSACHUSETTS.

State Medical Society,	Geo. Holmes Bixby, H. I. Bowditch, John R. Bronson, Joseph Reed Chadwick, E. H. Clark, W. W. Morland.

State Medical Society,	JAMES MORISON, ALEXANDER LEB. MONROE, LEVI F. WARNER.
Middlesex North Dist. Med. Soc.,	NATHAN ALLEN.

MICHIGAN.

State Medical Society,	H. B. BARNES, WM. BRODIE, BOLIVAR BARNUM, J. B. BOOK, H. B. BAKER, J. H. BEECH, L. W. BLISS, JAMES A. BROWN, LEARTUS CONNER, GORDON CHITTOCK, C. E. FROTHINGHAM, JAS. M. HOYT, EDW. W. JENKS, J. H. JEROME, T. J. LANGLOIS, J. F. NOYES, M. B. STEVENS, A. A THOMPSON, HORACE TUPPER.
Southern Michigan Med. Soc.,	J. W. FALLEY, HARVEY LOOMIS, CHESTER S. TUCKER.
Regular Bay Co. Medical Soc.,	C. V. TYLER.
Clinton County Medical Society,	LOUIS W. FASQUELLE.
Detroit Academy of Medicine,	THEO. A. MCGRAW.
Grand Rapids Medical and Surgical Society,	ARTHUR HAZLEWOOD.
St. Joseph Valley Med. Soc.,	C. W. BACKUS, W. J. KELSEY, MARDEN SABIN, T. F. THORNTON.
Wayne County Medical Society,	EUGENE SMITH, E. S. SNOW.

Washtenaw County Medical Society,	ELEAZER HALL, DONALD MACLEAN, F. M. OAKLEY, NATHAN WEBB.

MINNESOTA.

State Medical Society,	E. C. CROSS, D. W. HAND, A. W. STINCHFIELD, A. B. STUART.

MISSISSIPPI.

State Medical Society,	W. H. ARMISTEAD, WILLIAM M. COMPTON, E. W. HUGHES, WIRT JOHNSTON, BENJ. F. KITTRELL, D. A. KINCHLOE, J. D. MCCONNELL, A. G. SMYTHE, B. A. VAUGHAN, P. F. WHITEHEAD.
Columbus and Lowndes Co. Med. Society,	P. J. MAXWELL.

MISSOURI.

State Medical Society,	N. FRED. ESSIG, WM. C. GLASGOW.
St. Louis Medical Society,	WM. S. EDGAR, E. B. FOISEE, E. H. GREGORY, J. T. HODGEN, THOS. KENNARD, F. C. PORTER, THOMAS F. RUMBOLD, JAMES M. SCOTT, A. J. STEELE.
Medico-Chirurg. Soc. of St. Louis,	G. J. ENGELMAN, JNO. B. JOHNSON, G. A. MOSES.

Permanent Members,	JOHN S. MOORE, ALEX. J. MULLEN.

NEW HAMPSHIRE.

State Medical Society,	S. G. DEARBORN, J. W. PARSONS.

NEW JERSEY.

State Medical Society,	SAMUEL LILLY.
Morris County Medical Society,	THOS. B. FLAGLER.

NEW YORK.

State Medical Society,	A. N. BELL, REED B. BONTECOU, H. W. DEAN, H. D. DIDAMA, LOUIS ELSBERG, J. W. S. GOULEY, NATH. C. HUSTED, J. FOSTER JENKINS, E. M. MOORE, J. MARION SIMS, G. S. WINSTON, C. C. WYCKOFF.
Chenango County Medical Society,	GEORGE DOUGLASS.
Kings County Medical Society,	JNO. A. BRADY, JOHN BYRNE, W. F. SANFORD.
New York Co. Medical Society,	E. C. HARWOOD, MORRIS H. HENRY, JAMES R. WOOD.
New York Academy of Medicine,	L. DUNCAN BULKLEY, AUSTIN FLINT, WM. T. LUSK, MOREAU MORRIS, E. H. M. SELL.
Westchester Co. Medical Society,	HUGH M. IVES.
Warren County Medical Society,	G. R. MARTINE.
Permanent Members,	LAKE I. TEFFT, W. F. THOMS, LEWIS A. SAYRE.

NORTH CAROLINA.

State Medical Society,	N. J. PITTMAN.

OHIO.

State Medical Society,	ROBERTS BARTHOLOW, W. H. ELLSBERRY, S. F. FORBES, E. H. HYATT, THOMAS MCEBRIGHT, A. C. MCLAUGHLIN, WM. H. MUSSEY, X. C. SCOTT, CHARLES E. SLOCUM.
Brown County Academy of Med.,	THOS. W. GORDON.
Butler County Medical Society,	ALF. HANCOCK.
Cincinnati Academy of Medicine,	J. H. BUCKNER, THAD. A. REAMY, W. W. DAWSON, A. HOELTGE, C. S. MUSCROFT, H. NIEDERMEYER, J. J. QUINN, ALBERT ROSENFELD, J. W. UNDERHILL, M. P. WRIGHT.
Cincinnati Medical Society,	C. G. COMEGYS, JOHN A. MURPHY.
Montgomery County Medical Soc.,	A. S. DUNLAP.
Northwestern Ohio Med. Assoc.,	A. H. AGARD, C. E. BEARDSLEY, F. W. FIRMAN, L. W. MOE, T. E. PAUL.
Union Medical Association of Northeastern Ohio.	B. S. CHASE, W. C. JACOBS, S. T. ODELL.
Union District Medical Society,	JAMES MACREADY.
Permanent Members,	WM. CARSON, P. S. CONNER, A. DUNLAP,

Permanent Members,	A. J. ERWIN, JAS. P. HENDERSON, A. T. KEYT, O. M. LANGDON, O. D. NORTON.

PENNSYLVANIA.

Adams County Medical Society,	J. W. C. O'NEAL.
Allegheny County Medical Soc.,	S. N. BENHAM, W. S. HUSELTON, CYRUS B. KING, JAMES KING, W. F. KNOX, JAMES MCCANN, JAMES B. MURDOCH, A. M. POLLOCK, JAMES JOHN TODD, E. A. WOOD.
Blair County Medical Society,	WM. M. FINDLEY.
Crawford County Medical Society,	D. M. CALVIN.
Dauphin County Medical Society,	HIRAM MCGOWAN, ABRAM C. RENNINGER.
Delaware County Medical Society,	ISAAC N. KERLIN, WM. B. ULRICH.
Philadelphia Co. Medical Society,	WASHINGTON L. ATLEE, F. J. BUCK, THOMAS M. DRYSDALE, ALBERT FRICKÉ, SAMUEL D. GROSS, H. LENOX HODGE, H. C. WOOD.
Susquehanna County Med. Society,	E. N. SMITH.
Venango County Medical Society,	B. GILLETT.
Washington County Medical Soc.,	M. P. MORRISON.
Permanent Members,	JOSHUA G. ALLEN, WILLIAM B. ATKINSON, JOHN LOWMAN.

TENNESSEE.

State Medical Society,	T. A. ATCHISON, WM. T. BRIGGS, THOS. LIPSCOMB, W. T. MCREYNOLDS, DEERING J. ROBERTS.
East Tennessee Medical Society, Knox Section,	B. B. LENOIR.
Giles County Medical Society,	JAS. F. GRANT, J. C. ROBERTS, JAS. A. SUMPTER.
Nashville Medical Association,	A. BLITZ.
Rutherford County Medical Soc.,	JAMES F. BYRN.
Permanent Members,	W. K. BOWLING, PAUL F. EVE, J. H. VANDEMAN.

TEXAS.

State Medical Society,	J. M. CALLAWAY, J. M. FORT, S. G. HAYNIE, J. LARENDON, G. C. MCGREGOR, W. H. PARK, J. W. STALNAKER.
Dallas City Medical Society,	E. T. EASLEY.
Grayson County Medical Society,	W. E. SAUNDERS.
Waco Medical Society,	J. M. WILLIS.

VIRGINIA.

State Medical Society,	J. EDGAR CHANCELLOR, WM. C. DABNEY, JOS. S. TIPTON.

WEST VIRGINIA.

State Medical Society,	WM. J. BLAND, E. A. HILDRETH, JOHN C. HUPP, C. A. RUPERT.

City of Wheeling and County of Ohio Medical Society,	SAMPLE FORD, JOHN FRISSELL.
Permanent Members,	J. E. KENDALL, J. W. RAMSAY.

WISCONSIN.

State Medical Society,	J. K. BARTLETT, THOS. P. RUSSELL, H. P. STRONG.
Winnebago Co. Medical Society,	D. LA COUNT.

U. S. ARMY.

Med. Department U. S. Army,	JOHN S. BILLINGS, JOSEPH R. SMITH, J. JANVIER WOODWARD.

U. S. NAVY.

Med. Department U. S. Navy,	A. C. GORGAS, JOHN L. NEILSON, THOMAS N. PENROSE, JOSEPH WILSON.

A list of societies and individual delegates whose seats were contested was presented, and on motion referred to the Judicial Council.

On motion of Dr. BENHAM, of Pennsylvania, the list, as read, was adopted.

On motion, Drs. LE BARON BOTSFORD, and STEAVES, of the Canadian Medical Association, were received as members by invitation.

On motion of Dr. DAVIS, of Illinois, Dr. BOTSFORD, President of the Canadian Medical Association, was invited to a seat on the platform.

Dr. BOTSFORD, on reaching the platform, was presented to the Association. He said:—

GENTLEMEN: I have been called upon by your president to address you upon this occasion. The fewer words I say will, no doubt, make it all the more acceptable. As you are aware, the country which I have the honor to represent extends along your border, touching the Atlantic on the east and the Pacific on the

west. I have come to learn the principles which have secured your success, a success manifest from the assemblage I see before me. We are, as yet, few in number, scattered over a large surface, and we are making efforts to advance the interest of our profession. These efforts as yet cannot be said to show great results, but we trust before long to enter the arena, and to do battle, not with the arms of conflict, but in the cause of those principles which are the foundation of our professional position as benefactors of the race; for, without arrogating to ourselves any undue prominence, I trust I may say that, without excepting any body of men or any profession, I may claim for medical men an amount of self-denial and sympathy with their fellow-beings not to be surpassed, if even equalled.

Dr. HAYNIE, of Texas, said that as a Texan he wished Canada the same good luck that has attended the Lone Star State, both politically and medically, since its annexation.

The following were presented as candidates for membership by invitation, by the Chairman of the Committee of Arrangements, and were unanimously elected:—

JOHN H. RAUCH, Illinois; S. O. WETHERBEE, S. J. CALLAHAN, R. G. REDD, Kentucky; ROBERT BOLLING, Pennsylvania; FRED. PAINTER, Tennessee; W. SPENCER, S. H. CHARLTON, JOHN E. LINK, S. M. LINTON, W. A. COLLINS, Indiana; J. R. ELY, Kentucky.

Vice-President Dr. W. BRODIE, having taken the chair, the President then delivered the annual address.

On motion of Dr. B. H. CATLIN, of Connecticut, thanks were returned for this able address, and a copy was requested for publication.

The Permanent Secretary read the following from Vice-President Dr. H. W. BROWN, of Texas:—

WACO, Texas, April 29, 1875.

Mr. President and Gentlemen of the American Medical Association:

Circumstances beyond my control forbid me the pleasure of meeting with you. I can give you only the assurance of my abiding sympathy and interest in your self-sacrificing efforts in the cause we love, the science of medicine, whose banner, next the cross, represents the best, most momentous interests of humanity.

Texas is alive to the subject and the occasion, growing rapidly

in spirit and devotion to our loved profession, and determined upon persistent, organized effort, until the accomplishment of our highest, noblest aims.

May the Author of all good direct and bless your councils, prays one you have so lately honored.

H. W. BROWN,
V. P., etc.

The following papers were announced to be read before the Obstetrical Section:—

Congenital Occlusion and Dilatation of the Lymph Channels, by Dr. S. C. RUSEY, District of Columbia.

Normal Standard of Woman for Propagation, by Dr. NATHAN ALLEN, Massachusetts.

Before the Section on Practice of Medicine:—

On the Necessity for Coincident Clinical and Meteorological Observations and Records in the Study of Etiology, and on the Influence of Atmospheric Conditions in the Development of the Bowel Affections of Children, by Dr. N. S. DAVIS, Illinois.

Doses, their Physiological and Therapeutical Import, by Dr. EDW. H. CLARK, Massachusetts.

A paper on "One of the Lost Arts of the Profession," by Dr. S. D. GROSS, Pennsylvania, was announced for 11 o'clock on Wednesday.

Before the Surgical Section, Dr. L. A. SAYRE, New York, would read a paper on Partial Paralysis and Lack of Co-ordination from Genital Irritation.

A paper by Dr. H. R. STORER, Massachusetts, on American as compared with Foreign Winter Cures, was referred to the Section on Practice.

On motion, the report of Dr. J. M. TONER on Rank in the Army was made the order of the day after Dr. GROSS' paper, on Wednesday.

The list of committees was called by the Permanent Secretary, and the following reported:—

On Proper Legislation to Prevent the Spread of Syphilis: Dr. S. D. GROSS, Pa., Chairman. Referred to the Section on Surgery.

On the Use of Pessaries: Dr. JOHN MORRIS, Md., Chairman. Referred to the Section on Obstetrics.

On Cystic Degeneration of the Kidneys: Dr. JOHN A. OCTERLONEY, Ky., Chairman. Referred to the Section on Practice of Medicine.

On the Diseases of Minnesota and the Northwest: Dr. D. W. HAND, Minn., Chairman. Referred to the Section on State Medicine, etc.

On Necrology: Dr. S. C. CHEW, Md., Chairman. Referred to the Committee of Publication.

On Memorial on Dr. Henry Miller, deceased: Dr. S. D. GROSS, Pa., Chairman, and

On Memorial on Dr. Geo. Mendenhall, deceased: Dr. J. A. MURPHY, Ohio, Chairman, were both referred to the Committee of Publication.

The following papers were offered:—

A New Extension Apparatus, the Extension Windlass, by Dr. C. DENISON, of Colorado. Referred to Section on Surgery.

Ovarian Tapping, followed by a Cure, by Dr. E. H. M. SELL, of New York.

Obstetrics at Vienna, by the same. Referred to Obstetrical Section.

On motion, the Association adjourned until Wednesday at 9½ A. M.

SECOND DAY.

WEDNESDAY, May 5.

The President called the Association to order at 9½ A. M.

The Chairman of the Committee of Arrangements announced additional cases for the Judicial Council.

On motion of Dr. DAVIS, the Address of the Chairman of the Section on Practice of Medicine was made the order for 12 o'clock.

On motion, a recess was taken to select members of the Committee on Nominations.

On re-assembling, the list was announced as follows:—

Alabama, W. O. BALDWIN; Arkansas, D. A. LINTHICUM; Colorado, C. DENISON; District of Columbia, J. ELIOT; Florida, E. T. SABAL; Georgia, E. J. KIRKSCEY; Illinois, H. A. JOHNSON; Indiana, W. LOMAX; Iowa, J. WILLIAMSON; Kansas, C. C. FURLEY, Kentucky, JOS. THOMPSON; Maine, S. H. WEEKS; Maryland, J. MORRIS; Massachusetts, N. ALLEN; Michigan, J. H. BEECH; Minnesota, E. C. CROSS; Missouri, T. KENNARD; Mississippi, B. F. WHITEHEAD; New Hampshire, J. W. PARSONS; New York, JAS. R. WOOD; New Jersey, T. B. FLAGLER; North Carolina, N. J. PITTMAN; Ohio, W. W. DAWSON; Pennsylvania, E. A. WOOD;

Texas, E. T. EASLEY; Tennessee, T. A. ATCHISON; Virginia, J. E. CHANCELLOR; West Virginia, JOHN C. HUPP; Wisconsin, E. P. RUSSELL; United States Army, J. R. SMITH; United States Navy, JOS. WILSON.

On motion, the Permanent Secretary was directed, when but one delegate was present from a State, to place that name as the member on the list of this Committee.

The Judicial Council reported partially as follows:—

Inasmuch as the charges against the admission of Drs. Woodworth, Myers, and Rosenthal, as members of the Association are now pending before the State Medical Society of Indiana,

Resolved, That they should be permitted to register at this meeting and retain their standing until the final action of their State Society.

The same action was had in reference to Drs. J. R. Beck and J. S. Gregg.

The following were announced:—

The Section on State Medicine and Public Hygiene expect to consider at 3 P. M. a paper on Hemlock Poisoning, being the case of Dr. W. WALKER, of Brooklyn, New York, April 8, 1875, summarized by Dr. A. N. BELL, of the coroner's jury.

A report on State Medicine and Public Hygiene in Nebraska, by JAS. H. PEABODY, of Nebraska.

At 4 P. M., a paper by Dr. D. W. HAND, of Minnesota, on the Diseases of Minnesota and the Northwest.

The Section on Practice will expect Biometry, its Application to the Practice of Medicine, by Dr. MOREAU MORRIS, of New York.

Clinical Observations on the Changes Occurring in the Urine in the course of Diseases of the Skin, by Dr. L. D. BULKLEY, of New York.

Some Practical Observations on Exophthalmic Goitre and its Treatment, by Dr. ROBERTS BARTHOLOW, of Ohio.

A New Sphygmograph, by Dr. A. T. KEYT, of Ohio.

On the Treatment of Acute Pneumonia, by Dr. T. J. ERWIN, of Ohio.

A new biological doctrine, intended to take the place of the cell doctrine, and

On Auscultation of the Œsophagus, by Dr. L. ELSBERG, of New York.

The following, from the Canadian Medical Association, was read by the Secretary:—

MONTREAL, April 19, 1875.

WILLIAM B. ATKINSON, ESQ., M. D.,
Secretary American Medical Association:—

DEAR SIR: As the time is approaching for the meeting of the American Medical Association, I have much pleasure in forwarding a copy of a resolution unanimously adopted at the last meeting of the Canada Medical Association, held at Niagara Falls on the 5th and 6th of August, 1874, and request you will kindly bring it to the notice of your Association.

The Canada Medical Association will meet this year at Halifax, Nova Scotia, on the first Wednesday in August, and we shall be much pleased at seeing, as heretofore, delegates from your Association.

I think it more than probable that our Association will be represented at your meeting by at least two of our members, one of whom will be the able President, Dr. LeB. Botsford, of St. John, New Brunswick.

I am, dear sir, yours very truly,

A. H. DAVID, M.D., D.C.L.,
General Secretary.

"Moved by Dr. Grant, seconded by Dr. Caniff, That in consideration of the best interests of medical science, it is desirable that a medical conference should take place between the American and Canada Medical Associations at some central point to be determined upon, and that the American Medical Association be advised as to the desirability of thus becoming more intimately acquainted, and affording an opportunity for the discussion of medical and surgical subjects on a common basis;" which was carried unanimously, when Dr. Kingston, seconded by Dr. Botsford, moved,

That in the event of such a conference being determined upon, it would be desirable that the Secretary of the Canada Medical Association notify the various local medical societies so that the Dominion might take part in a manner worthy of the occasion, and in keeping with the best interests of medical science; which motion was also unanimously agreed to.

On motion, the matter was referred to the Committee on Nominations.

The Permanent Secretary read the following report from Dr. E. SEGUIN, of N. Y., which on motion was ordered to be entered on the minutes, and the resolution was adopted.

To the American Medical Association.

MR. PRESIDENT AND GENTLEMEN: You have twice sent delegates to the British Medical Association, and kindred European Societies, to invite them to concert a plan of *uniformity of methods, instruments, scales, and records of clinical observation.*

This proposition has become more opportune since the meeting in Paris of the convention for the adoption of uniform weights and measures by all nations; in which convention Professors Henry and Hilgard represent the United States, but in which the special wants of unity of measures of our profession are not represented.

This proposition was approved by Sir William Jenner, MM. Reynolds, Sibson, Stewart, Squire, Sydney Ringer, Wilson, and Tilbury Fox, in England; on the Continent by MM. Marcy, Charcot, Lorain, Potain, Lépine, Ollier, Chauveau, all ready to open a commission in Paris, and a sub-commission in Lyon, in order to concur in your plan of *uniform observation.*

This plan embraces the unity of clinical thermometers and of thermometric scales, charts, etc.; a uniform graduation of the sphygmograph, myograph, spyrograph, æsthesiometer, dynamometer, globulimeter, ophthalmoscope, thermoscope, and other instruments of precision used in diagnosis; a uniform method of measuring and registering the hearing, the velocity of other sensory impressions, the regularity of co-ordinate movements as the walk; and a uniform registration of all clinical cases according to their kind.

Of this plan, the International Medical Congress meeting at Bruxelles, the 19th September prox., proposes to carry out only one part, *the uniform measurement and record of hearing by all nations.* It is therefore important that the American Medical Association be represented this year at Bruxelles, in order to represent there the original plan of *uniformization of clinical observation* in its integrity and entirety.

Therefore, the American Medical Association resolves to nominate new delegates, commissioned to again advocate in Europe the *unity of clinical observation*, and charges them to report progress in brief, at the next meeting of 1876.

One of the delegates,

E. SEGUIN.

NEW YORK, 17 E. 21st Street, 27 April, 1875.

The hour having arrived, Dr. S. D. GROSS, of Pennsylvania, read a paper on bleeding as one of the lost arts of the medical profession.

On motion, it was referred to the Committee of Publication.

Dr. J. M. TONER, of District of Columbia, read his report on Rank of the Medical Corps of the Army.

On motion, the report was received and the resolutions were adopted.

The Committee (of one from each State) on the Rank of the Medical Department of the Army respectfully report: That as soon as possible after the adjournment of the Detroit meeting of this Association, a form of petition to Congress was agreed upon, in which the unsatisfactory position of the medical corps was briefly stated and the nature of the relief asked for indicated. This petition was circulated among the physicians of the several States by the members of the Committee, and was very extensively signed. In connection with the petition an explanatory pamphlet was widely distributed. It contained a "brief statement of the facts" connected with the subject, and a draft of a bill, the passage of which would have placed the medical corps on a satisfactory footing in the matter of rank. A copy of the pamphlet is herewith submitted. The bill, which was prepared after consultation with the Surgeon General and a number of the other medical officers of the army, did not propose to alter the number of medical officers now allowed by law, but merely provided that after thirteen years' service medical officers should have the rank of major; after twenty-three years' service, the rank of lieutenant-colonel, and after thirty years, the rank of colonel. Immediately after Congress convened last December this bill was duly introduced in both houses, and in each read twice and referred to the Military Committee. During the rest of the session every effort was made to secure its favorable consideration. Three petitions from the several States were duly presented; copies of the explanatory pamphlet were sent to each Senator, and members were personally conferred with. These efforts were so far successful that before the close of the month of December the Military Committee of the House of Representatives agreed to report the bill to the favorable consideration of the House; but the press of other measures of greater political interest caused this to be postponed from time to time, until the session came to a close without any action

having been taken. It is believed, however, that the medical profession of the United States will not be satisfied with this inaction. Your committee have certainly found a gratifying unanimity of sentiment on the subject among the physicians of all parts of the country, and have been led to believe that it is their earnest desire that this Association shall continue to urge the claims of their brethren of the medical staff of the army upon Congress until such a law is enacted as will secure to them the share of rank we believe they ought to enjoy.

It is hoped that the matter may be pressed at the next session of Congress with a chance of better success than it had at the last session. Much assistance will doubtless be rendered by those physicians who are personally acquainted with members of Congress by explaining the merits of the appeal made, but this Association certainly ought also to continue its efforts; and the passage of the following resolutions is therefore recommended:—

Resolved, That this Association learns with regret that no action was taken by the last Congress upon its recommendation in behalf of the medical department of the United States Army, and that we respectfully renew our petition that Congress will enact such a bill for the benefit of the medical department of the army as will secure to its officers that share of rank and promotion to which we consider they are entitled, and which should be at least fully equal to that enjoyed by any other staff corps, or by the medical corps of the navy.

Resolved, That a committee of five be appointed to call the attention of Congress to this subject and the petitions which were forwarded to the last Congress by the physicians of the United States.

J. M. TONER,
Chairman of the Committee.

Dr. WOODWARD, U. S. Army: I desire, on the part of my colleagues of the army, to express our thanks to this Association and the profession of the entire country for the ready manner, unanimous manner I may say, in which they moved upon our behalf during the last session. The petitions which were forwarded have seven or eight thousand names upon them, embracing almost every name well known to medical science in the United States. Of course we were disappointed that no action was taken, particularly as during the early part of the session

we had reason to anticipate it, for we had hoped, if we did not succeed in obtaining all that we wished for, that we should have some relief granted. But we are sanguine that in the long run we shall be successful if the Association continues to take the same interest in the future as it has done in the past.

Dr. AUSTIN FLINT, of New York, read his address as Chairman of the Section on Practice of Medicine.

On motion, it was referred to that Section.

On motion of Dr. STEWART, of Minnesota, Dr. Flint was requested to report on new remedies.

The Permanent Secretary read the following report of the Committee on an International Medical Association:—

Your Committee, appointed at the last meeting of this Association to digest a plan for an International Medical Association, have the honor to report that they have carefully considered the subject, and are impressed with the belief that an organization of a permanent International Medical Association is highly desirable for the purpose of considering from an international standpoint such questions as the preparation of an international pharmacopœia, a common nomenclature of disease, a uniform system of registration, and formulæ for collecting vital statistics, quarantine, and all measures that affect public health, etc.

But after a conference and correspondence with prominent members of the profession at home and abroad, it is not thought best to submit a definite plan at the present time. Further consultation upon the subject with the profession, and with medical organizations of foreign countries, ought first to take place, as their sympathies and hearty co-operation in a measure of this kind are essential to its usefulness and success.

And further, that we find that an International Medical Congress will assemble at Brussels on September 19, 1875, to which all nations are invited to send delegates. Three periodical international Congresses of Medical Science of this kind, patronized by the governments of Europe, have met at different times and places.

We would therefore recommend, before any further action be taken, that this Association send delegates to the proposed International Congress about to meet at Brussels. Such delegates to report to this Association at a future meeting how far, in their opinion, the plan of this Congress, that has from time to time been assembled in Europe, is likely to meet the wants felt by the medical profession of the United States, and particularly as ex-

pressed in favor of the organization of a permanent International Medical Association at our last meeting.

J. M. TONER,
Chairman of Committee.
J. S. BILLINGS,
N. S. DAVIS,
AUSTIN FLINT.

On motion the report was accepted, the recommendation adopted, and the Committee continued.

The address of Dr. E. M. MOORE, of New York, as Chairman of the Section on Surgery, was made the special order for 11 o'clock A. M. on Thursday.

The address of Dr. W. H. BYFORD, of Illinois, as Chairman of Section on Obstetrics, to follow, and that of Dr. H. I. BOWDITCH, of Massachusetts, Chairman of Section on State Medicine and Public Hygiene next.

The Committee on Medal presented their report, which was accepted, and on motion of Dr. W. B. ATKINSON it was agreed that each member should receive one by mail on the payment of $1.12.

The Committee appointed to procure a suitable die for a medal with the likeness of Dr. N. S. Davis on one side, and the name and date of the organization of the Association on the opposite, have the honor to report, that in accordance with the resolution, they have procured an excellent die with a faithful likeness as directed, from Mr. William Barber of the U. S. Mint in Philadelphia, and which has been paid for by our treasurer, and we herewith submit a medal in bronze struck from the same.

It will be remembered by the members of the Association that the resolution passed at the last session of this body provided, that hereafter a copy of the medal should be furnished to each delegate on becoming a member. On corresponding with the treasurer, however, it was found that, in his opinion, the resolution was not so worded as to authorize any expenditure of money for any other purpose than to procure the die.

Your Committee have, therefore, only to report, that the medals can be struck off in bronze at the Philadelphia Mint at a cost of one dollar apiece, if two hundred be ordered at once, and at a cost of one dollar and a quarter apiece, if a smaller number be ordered.

J. M. TONER,
J. J. WOODWARD,
J. M. KELLER.

Dr. L. BEECHER TODD, of Kentucky, offered the following, which was adopted:—

WHEREAS, This Association has learned with the deepest regret of the serious illness of a distinguished member of this body, and Chairman of Prize Essay Committee of this meeting, Dr. JOHN D. JACKSON, of Kentucky, now confined to his hotel in this city; therefore be it

Resolved, That this Association hereby tenders to Dr. John D. Jackson assurances of warmest sympathy and sincere hope for his recovery.

On motion, the Association adjourned to meet on Thursday, at 9½ A. M.

THIRD DAY.

THURSDAY, May 6.

The President called the Association to order at 9½ A. M.

The Permanent Secretary announced:—

In the Section on State Medicine and Public Hygiene, Dr. BOWDITCH will exhibit and explain a diagram illustrating the apparent influence of cloudy days upon the proportion of deaths from consumption, including a series of years from 1810 to 1867.

There will be a report of certain papers and correspondence of the President relative to the work of the Section and to the establishment of a National Board of Health.

A partial report of the Committee on Ventilation.

Dr. J. E. LINK offered a paper on Amputation with Open Stump. Referred to Section on Surgery.

Dr. L. J. WILLIEN, of Indiana, a case of Hydronephritis with Renal Calculi. Same reference.

On motion, Dr. D. S. REYNOLDS, of Kentucky, was appointed to prepare a paper on Mechanism of Accommodation of the Eye.

The Obstetrical Section announced for the afternoon, papers on Treatment of Uterine Fibroids with Ergot, and on Retroversion of the Uterus in Pregnancy.

The Permanent Secretary read the following, which, on motion, was received and entered on the minutes:—

AMERICAN SOCIAL SCIENCE ASSOCIATION,
BOSTON, April 9, 1875.

WILLIAM B. ATKINSON, M.D., *Secretary American Medical Association*, 1400 *Pine St., Philadelphia:*—

DEAR SIR: I am instructed by the Executive Committee of this Association to transmit through you as Permanent Secretary of the American Medical Association an invitation to its members to attend the meeting of the American Social Science Association, at Detroit, on the 11th to 14th of May. It has been suggested that such of your members as find it agreeable to accept our invitation can readily visit Detroit after the adjournment of your own meeting at Louisville.

I inclose our circular concerning the Detroit meeting, in which, however, there is an error, the Sectional meeting of the Health Department, which is there set down for Thursday, being really assigned for Wednesday the 12th.

Very truly yours,

F. B. SANBORN,
Secretary.

Dr. A. FLINT, of New York, offered the following, which was adopted:—

During the present meeting of the American Medical Association we have missed the familiar face and the active co-operation of one of the most distinguished members of our profession in the city of Louisville, Dr. LEWIS ROGERS. He is ill, and has been so for some months. Under these circumstances it seems proper that the Association should express a tribute of respect to, and sympathy for, our worthy colleague. I, therefore, offer this resolution:—

Resolved, That the American Medical Association tender to Dr. Lewis Rogers regret for the illness that has deprived the Association of his presence and aid in its proceedings; and our earnest hope that the profession and the community may again be blessed by his return to the enjoyment of health.

A memorial address on Dr. EDWARD M. CURTIS, of Sacramento, was received, and, on motion, was ordered to be entered on the minutes.

At a regular meeting of the Sacramento Society for Medical Improvement, the following report, from the committee appointed to draft resolutions expressive of the sentiments of the Society

upon the occasion of the death of Dr. Ed. M. Curtis, was unanimously adopted:—

Mr. PRESIDENT: But yesterday, with saddened hearts, we followed to the grave an honored friend and brother, full of years, wearied with the toils of life, and ripe for the sickle. Scarcely had the weeds of mourning withered, when another, instinct with the elasticity of youth, and with bright promise for the future, was stricken down by the relentless shaft, and now a third, in middle age, a beloved associate, not unexpectedly to himself, but suddenly to us, has gone from among us and severed another link in that chain of affection which for six years had remained unbroken.

A regular attendant upon the meetings of this Society, the author of some of the most valuable papers which it has given to the press, and an ardent lover of his profession, and a warm-hearted, genial companion, the death of Ed. M. Curtis has left a void in our little circle which we feel that it will be difficult to fill.

As a student of medicine, he was a man of rare comprehension and thorough accomplishments; as a practitioner in the specialty to which his later years had been devoted, he was without a superior, perhaps without an equal on the Pacific coast.

But not by us alone will his loss be felt. He gained the friendship and esteem of all who knew him, and among the many who sought his counsel and received the benefit of his skill, there are but few to whom the intelligence of his death will not bring sorrow and sadness.

Recognizing his worth to us, to the community, and to the profession, and the irreparable loss we have mutually sustained, we, your Committee, respectfully recommend that this minute, feebly expressive of our regard for our departed friend, be entered upon the records of the Society, published in the daily papers of the city and in the medical press of the State, and a certified copy thereof be sent by the Secretary to the widow of the deceased, and to the societies of which he was a member.

SACRAMENTO, May 19, 1874.

F. W. HATCH, M.D.,
THOS. M. LOGAN, M.D.,
H. L. NICHOLS, M.D.
JOS. F. MONTGOMERY, M.D.,
President.

F. W. HATCH, JR., M.D.,
Secretary.

Dr. Wm. B. Atkinson, of Pennsylvania, announced that the Philadelphia County Medical Society, by unanimous resolution, invited this Association to meet in Philadelphia in 1876. On motion, this communication was referred to the Committee on Nominations.

The Permanent Secretary read the Report of the Committee of Publication:—

The Committee of Publication respectfully report that the larger portion of the copy of Vol. 25 was ready for the printer on June 15th, 1874. The finished volume was put into the hands of the members in the ensuing October. There was the usual unavoidable delay, in consequence of the necessity of waiting for replies to the circular sent to the members, upon which the determination of the size of the edition depended. While the avoidance of this delay is in many respects desirable, especially as regards the convenience of many contributors, the interests of the Association imperatively demand that as few superfluous copies should be printed as is possible.

It is very desirable that all the material of the different Sections should be promptly in the hands of the committee in order to avoid the loss of time which, in at least one instance, occurred, in the issue of the present volume. It is earnestly hoped that in future all possible delay will be sedulously avoided.

It gives the committee pleasure to say that a marked improvement in the preparation of copy in comparison with that of previous volumes was evident in the present volume. Much labor was saved to the committee by this care. There is room, however, for much further improvement. Whatever may be the literary, scientific, or practical merit of the matter furnished for the Transactions of the Association, the purely mechanical adjuncts of good copy should never be overlooked. The exercise of a little thoughtful attention on the part of authors will not only lighten the labors of your committee, but will enhance the merit of the volume. The reiterated utterance of this counsel may seem wearisome to the Association, but it is especially offered in the interests of the contributors to the Transactions. The accompanying statement exhibits the number of copies of each volume now on hand, and of those disposed of since last report.

All of which is respectfully submitted.

FRANCIS G. SMITH, Jr.,
Chairman.

He then read the Treasurer's Report.

The Treasurer has the honor to report, that long experience has shown that, taking one year with another, the Association will be able to publish its volume of *Transactions* for the present annual assessment of five dollars, so long as the Association adheres to such expenditures as are strictly in accordance with the purposes of its formation, aided by careful regard on the part of the Sections as to the quantity of matter referred to the Committee of Publication.

Owing to a recent change of the postal law, the cost of delivery of the *Transactions* is doubled, so that the volume will cost, delivered, a sum approximating six dollars; this is, perhaps, as much as the members of the Association desire to pay: therefore the Treasurer invites attention to the fact that an inconsiderate appropriation of funds, for other than present uses, will involve an increase of the annual assessment, if the treasury is left without a reserve fund, and the volume should cost over five dollars to publish, as at times occurs.

There was a balance in the treasury of $3022.41.

He next read the report of the Librarian, with a catalogue of additions to the library, and a resolution that thirty copies of the *Transactions* be appropriated for foreign exchanges.

On motion, these reports were received and referred to the Committee of Publication.

On motion, it was

Resolved, That thirty copies of the Transactions be appropriated for foreign exchanges.

Dr. J. MARION SIMS, N. Y., read the Report of the Committee on the McDowell Memorial Fund, which on motion was received, and the resolutions were unanimously adopted.

Whereas, It is universally acknowledged that the late EPHRAIM McDOWELL, of Kentucky, was the originator of the operation of ovariotomy;

And, whereas, We believe that proper measures should be instituted to commemorate this great achievement, and do appropriate honor to its author; therefore

Resolved, That this Association recommend to each of its members, and to the profession generally, to contribute annually such sums as they may think proper until the amount of ten thousand dollars shall be accumulated, which shall be known as the McDowell Memorial Fund, the interest of which shall be devoted

to the payment of prizes for the best essays relating to the diseases and surgery of the ovaries.

Resolved, That this fund shall be invested by trustees to be appointed by the Association, and subject to such regulations as it may devise.

Resolved, That this Association shall elect a board of three trustees, whose duty it shall be to carry out the object of these resolutions, and whose term of office shall continue five years.

Resolved, That this Association will leave to the State of Kentucky the grateful privilege of providing a local memorial to the memory of Dr. McDOWELL.

Respectfully submitted,

J. MARION SIMS, New York,
WASHINGTON L. ATLEE, Pa.,
W. H. BYFORD, Illinois,
J. M. KELLER, Kentucky.

For the information of the Association, Dr. GROSS read the following:—

AMERICAN CENTENNIAL CELEBRATION.
CENTENNIAL MEDICAL COMMISSION OF PHILADELPHIA.
INTERNATIONAL MEDICAL CONGRESS.

The Philadelphia County Medical Society, embracing nearly two hundred members, many of them of high professional distinction, animated by a just spirit of patriotism, and an earnest desire to unite with its fellow-citizens in celebrating the Centennial Birthday of American Independence, early in 1874 took the initiatory steps for the formation of an International Medical Congress, by the appointment of a committee of fifteen of its members, with plenary power to organize and perfect a scheme for the consummation of its wishes. In accordance with the authority thus delegated, the committee, acting under the name and style of "The Centennial Medical Commission of Philadelphia," have selected the following

Officers: *President*, Samuel D. Gross, M.D., LL.D., D.C.L. Oxon.; *Vice-Presidents*, W. S. W. Ruschenberger, M.D., U. S. N., Alfred Stillé, M.D.; *Secretary*, William B. Atkinson, M.D.; *American Corresponding Secretary*, Daniel G. Brinton, M.D.; *Foreign Corresponding Secretary*, Richard J. Dunglison, M.D.; *Treasurer*, Caspar Wister, M.D.

The objects of the Commission will be best understood by the subjoined abstract of its proceedings on the 29th of March, 1875:—

I. That arrangements be made for holding an International Medical Congress, under the auspices of the Centennial celebration, to convene in this city early in September, 1876.

II. That among the prominent objects shall be the reading of discourses: 1st, on Medicine and Medical Progress in the United States; 2dly, on Surgery; 3dly, on Obstetrics; 4thly, on Chemistry and Pharmacy; 5thly, on Materia Medica; 6thly, on Medical Jurisprudence and Toxicology; 7thly, on Hygiene and Social Science; 8thly, on Medical Biography; 9thly, on Medical Education and Medical Institutions; 10thly, on Medical Literature.

III. That the morning sessions of the Congress shall be devoted to general business and the reading of discourses; the afternoon sessions to the Sections, of which there shall be five: namely, one on Medicine, one on Surgery and Anatomy, one on Obstetrics, one on Chemistry, Materia Medica, Hygiene, and Medical Jurisprudence, and one on Ophthalmology and Otology.

IV. That this Congress shall consist of delegates, native and foreign, the former representing the American Medical Association and the medical societies of the different States and Territories of the Union.

V. That its officers shall consist of a president, thirteen vice-presidents, of whom seven shall be natives and six foreigners; three secretaries, a treasurer, a committee on publication, and an executive committee.

VI. That no vote shall be taken during the sittings of the Congress upon any topic discussed or address delivered.

It will thus be perceived that among the various features of the International Congress, one of the most prominent will be the reading of addresses in the different branches of medical sciences, illustrative of the advances made in them during the last hundred years in the United States. The preparation of these addresses has been intrusted to able hands, and it is intended to publish them in an appropriate volume, commemorative of the occasion.

In order to impart to the Congress a strictly international character, invitations will be extended to all the prominent medical societies in Europe, Mexico, the British Dominions, Central and South America, the Sandwich Islands, the East and West Indies, China, and Japan, as well as to numerous medical gentlemen noted for their high scientific and social position. The object will be to make the meeting one of a truly representative

character of the profession, both in its native and foreign elements; and hence, that no unworthy applicants may be admitted, proper testimonials will, in every instance, be required by the Committee on Credentials. Distinguished medical gentlemen, coming here as visitors, may be admitted to membership by special invitation.

Apart from the scientific advantages arising from such a convocation as this, not the least important will be the opportunity afforded to its members for the interchange of friendly greetings, the formation of new acquaintances, and the renewal and cementing of old friendships. We tender in advance to our brethren in all parts of the world a cordial welcome, and a generous hospitality during their sojourn in the "Centennial City."

The Congress will be formally opened at 12 o'clock noon, on of September, 1876. All business communications must be addressed to the secretaries, Drs. Atkinson, Dunglison, and Brinton.

The registration book will be opened three days prior to the meeting.

The special hour having arrived, Dr. E. M. MOORE, of New York, read his address as Chairman of the Section on Surgery.

On motion, it was referred to that Section.

The Judicial Council presented the following report:—

The Judicial Council of the American Medical Association would respectfully report as follows:—

In reference to the difficulties existing between the members of the Allen County Medical Society of Indiana and the Fort Wayne Medical Association of Indiana, we would respectfully refer the whole subject to the State Medical Society of Indiana for adjudication.

In reference to the Arkansas State Medical Association, the following resolution was adopted, to wit:—

Resolved, That the delegates of said State Medical Association should be admitted to proper registration at this meeting of the American Medical Association. Also, that the protests of the local Societies of Arkansas be referred to their State Society for adjudication.

The name of Dr. SWEENY, as a delegate from the State Medical Society of Kentucky, was rejected for the simple reason that that State had already sent its full complement of delegates to this Association.

The following resolution in regard to delegates from the College of Physicians and Surgeons of Louisville was passed:—

Resolved, That the list of delegates appointed by the Society known as the College of Physicians and Surgeons of Louisville, Ky., consisting of Drs. TURNER ANDERSON, WM. BAILEY, D. W. YANDELL, LEWIS ROGERS, and G. W. HOLLAND, are the lawful and proper delegates from that Society, and that the Committee of Arrangements should correct the registry of members for this meeting of the Association in conformity thereto. Also, in reference to the Academy of Medicine, that the action of the Committee of Arrangements in declining to receive and register the names of all the delegates appointed by the Society known as the Louisville Academy of Medicine, is approved as correct, simply because it is believed that the Association had already received from the State Medical Society of Kentucky, and the local Societies in Louisville having a prior active existence, the full number of delegates to which the profession of Louisville are entitled under the present constitution of this Society.

S. N. BENHAM, *Secretary*.

Dr. W. H. BYFORD, of Illinois, read his address as Chairman of Section on Obstetrics, "On Uterine Fibroids treated with Ergot." Referred to that Section.

A paper on "Phlebitis," by Dr. J. G. ALLEN, of Pennsylvania, was announced for the Obstetrical Section.

An Essay on Experiments with Kœnig's Rods, by Dr. L. TURNBULL, of Pennsylvania, was referred to the Section on Practice of Medicine.

On motion, the Association adjourned to meet on Friday at 9½ A.M.

FOURTH DAY.

FRIDAY, May 7.

Vice-President Dr. BRODIE called Association to order at 9½ A.M.

A report of progress from the Committee on Cultivation of the Cinchona Tree was read, and, on motion, the committee was discontinued.

On motion of Dr. S. C. BUSEY, of the District of Columbia, it was

Resolved, That all motions which involve the authorization of expenditure of funds of the Association, except the expenses of the Publication Committee and the salary of the Secretary, shall be referred to the Judicial Council for recommendation before final action be taken on them by the Association.

Dr. GEORGE COWAN, of Kentucky, offered to exhibit a new modification of Squire's vertebrated catheters before the Surgical Section.

The following was received from the Committee on Nominations, and, on motion, was adopted:—

Whereas, The Canada Medical Association has adopted and furnished to this Association the following resolution:—

"*Resolved*, That in consideration of the true interests of medical science, it is desirable that a medical conference should take place between the American Medical Association and the Canada Medical Association at some central point."

Therefore, on motion of Dr. E. A. WOOD, of Pennsylvania, be it

Resolved, That a committee of thirteen be appointed by this Association, whose duty it shall be to confer with a like committee of the Canada Medical Association at such place and time as may be agreed upon by the joint committee of the Associations: Committee: Dr. S. D. GROSS, of Pennsylvania; Dr. JOHN T. HODGEN, of Missouri; Dr. AUSTIN FLINT, of New York; Dr. WILLOUGHBY WALLING, of Kentucky; Dr. L. C. LANE, of California; Dr. WIRT JOHNSTON, of Mississippi; Dr. WILLIAM BRODIE, of Michigan; Dr. J. M. TONER, of District of Columbia; Dr. F. D. CUNNINGHAM, of Virginia; Dr. E. ANDREWS, of Illinois; Dr. WM. B. ATKINSON, of Pennsylvania; Dr. H. I. BOWDITCH, of Massachusetts; Dr. ROBERTS BARTHOLOW, of Ohio.

On motion of Dr. JOHN MORRIS, of Maryland, it was

Resolved, That the chief officer of the Signal Service Corps of the Government be respectfully requested, if it be within the range of his powers, to have the quantity of ozone in the atmosphere at different parts of the country telegraphed and published in the weather reports.

The following gentlemen were appointed as delegates to European Medical Associations: Drs. H. D. HOLTON, of Vermont; A. E. M. PURDY, of New York; H. R. STORER, of Massachusetts; H. B. SANDS, JOHN DRAPER, J. C. HUTCHISON, of New York; E. T. EASLEY, of Texas; E. C. HARWOOD, of New York; J. A.

ADRIAN, of Ohio; JOHN C. HUPP, of West Virginia; L. F. WARNER, of Massachusetts; JOHN MORRIS, of Maryland.

To Canadian Medical Association: Dr. S. D. GROSS, of Pennsylvania; T. ANDERSON, of Kentucky; W. WALLING, of Kentucky; W. BRODIE, of Michigan; W. B. ATKINSON, of Pennsylvania; L. F. WARNER, of Massachusetts; E.W. JENKS, of Michigan; P. PINEO, of Massachusetts.

On motion of Dr. W. B. ATKINSON, it was

Resolved, That the President and Permanent Secretary have power to add names to both delegations as may be desirable.

Dr. JOHN C. HUPP, of West Virginia, offered the following:—

Before presenting the report of the Committee on Nominations, as Secretary of that Committee, I have been instructed to offer for the action of the Association the following amendment to the By-Laws:—

In section second, paragraph third, line second, after the word "State," insert "one from the Army and one from the Navy of the United States."

On motion, this amendment was unanimously adopted.

The Committee on Nominations then reported as follows:—

The Committee on Nominations respectfully report that they nominate the following gentlemen for the various offices named:—

PRESIDENT.

Dr. J. MARION SIMS, *of New York.*

VICE-PRESIDENTS.

1. Dr. JOHN D. JACKSON, *of Kentucky.*
2. Dr. SAMUEL LILLY, *of New Jersey.*
3. Dr. NINIAN PINKNEY, *of United States Navy.*
4. Dr. S. D. SEELYE, *of Alabama.*

TREASURER.

Dr. CASPAR WISTER, *of Pennsylvania.*

LIBRARIAN.

Dr. WILLIAM LEE, *of District of Columbia.*

COMMITTEE ON LIBRARY.

Dr. JOHNSON ELIOT, *of District of Columbia.*

ASSISTANT SECRETARY.

Dr. RICHARD J. DUNGLISON, *of Pennsylvania.*

Committee of Arrangements.—Drs. WILLIAM PEPPER, Chairman; FRANK F. MAURY, ALBERT FRICKE, ADDINELL HEWSON, S. W. GROSS, WILLIAM GOODELL, T. M. DRYSDALE, all of Pennsylvania.

Committee of Publication.—Drs. F. G. SMITH, T. M. DRYSDALE, ALBERT FRICKE, WILLIAM B. ATKINSON, CASPAR WISTER, of Pennsylvania; WILLOUGHBY WALLING, of Kentucky; W. LEE, of District of Columbia.

As next place of meeting—Philadelphia, Pa., was chosen.

Time of meeting—First Tuesday in June, 1876.

The Committee also report the following nominations for Chairmen and Secretaries of Sections for 1876:—

1. Practice of Medicine, Materia Medica and Physiology, Dr. F. G. SMITH, of Pennsylvania, Chairman, and B. A. VAUGHAN, of Mississippi, Secretary.

2. Obstetrics and Diseases of Women and Children, Dr. SAMUEL C. BUSEY, of District of Columbia, Chairman, and Dr. ROBERT BATTEY, of Georgia, Secretary.

3. Surgery and Anatomy, Dr. ALONZO GARCELON, of Maine, Chairman, and Dr. E. T. EASLEY, of Texas, Secretary.

4. Medical Jurisprudence, Chemistry, and Psychology, Dr. E. L. HOWARD, of Maryland, and Dr. V. L. HURLBUT, of Illinois, Secretary.

5. State Medicine and Public Hygiene, Dr. R. C. KEDZIE, of Michigan, Chairman, and Dr. EZRA M. HUNT, of New Jersey, Secretary. Members: Drs. J. B. GASTON, of Alabama; D. A. LINTHICUM, of Arkansas; T. M. LOGAN, of California; CHARLES DENNISON, of Colorado; B. H. CATLIN, of Connecticut; L. P. BUSH, of Delaware; F. HOWARD, of District of Columbia; W. A. LOVE, of Georgia; H. A. JOHNSON, of Illinois; GEORGE SUTTON, of Indiana; A. G. FIELDS, of Iowa; C. V. MOTTRAM, of Kansas; TURNER ANDERSON, of Kentucky; S. M. BEMISS, of Louisiana; S. H. WEEKS, of Maine; JAMES A. STUART, of Maryland; H. I. BOWDITCH, of Massachusetts; A. B. STUART, of Minnesota; W. H. ARMISTEAD, of Mississippi; FRANK G. PORTER, of Missouri; J. H. PEABODY, of Nebraska; J. W. PARSONS, of New Hampshire; A. N. BELL, of New York; J. J. QUINN, of Ohio; WM. F. KNOX, of Pennsylvania; E. M. SNOW, of Rhode Island; R. A. KINLOCK, of South Carolina; J. H. VANDEMAN, of Tennessee; J. M. FORT, of Texas; J. L. CABALL, of Virginia; A. T. WOODWARD, of Vermont; H. P. STRONG, of Wisconsin; JOHN

FRISSELL, of West Virginia; WM. A. B. NORCOM, of North Carolina; JOHN S. BILLINGS, U. S. Army; JOSEPH WILSON, U. S. Navy.

Committee on Necrology.—Dr. S. C. CHEW, of Maryland, Chairman; Drs. B. R. JONES, of Alabama; A. H. SCOTT, of Arkansas; HENRY GIBBONS, JR., of California; G. W. RUSSELL, of Connecticut; L. P. BUSH, of Delaware; W. W. JOHNSTON, of District of Columbia; E. J. KIRKSCEY, of Georgia; W. M. CHAMBERS, of Illinois; THAD. M. STEVENS, of Indiana; J. W. H. BAKER, of Iowa; D. W. STORMONT, of Kansas; L. P. YANDELL, SR., of Kentucky; ALONZO GARCELON, of Maine; A. SAGER, of Michigan; A. W. STINCHFIELD, of Minnesota; WM. M. COMPTON, of Mississippi; A. J. STEELE, of Missouri; J. H. PEABODY, of Nebraska; J. H. WHEELER, of New Hampshire; JOHN BLANE, of New Jersey; W. H. BAILEY, of New York; GEO. MITCHELL, of Ohio; W. C. WARRINER, of Oregon; HORATIO C. WOOD, of Pennsylvania; CHAS. W. PARSONS, of Rhode Island; A. N. TALLEY, of South Carolina; JOHN H. CALLENDER, of Tennessee; S. D. THURSTON, of Texas; LEVIN S. JOYNES, of Virginia; ROBERT W. HAZLETT, of West Virginia; N. M. DODSON, of Wisconsin; J. J. WOODWARD, of United States Army; JOSEPH WILSON, of United States Navy; C. J. O'HAGAN, of North Carolina; J. R. BRONSON, of Massachusetts.

Judicial Council.—Drs. LEVIN S. JOYNES, of Virginia; R. N. TODD, of Indiana; ROBERT BATTEY, of Georgia; JAMES E. MORGAN, of District of Columbia; THOMAS B. FLAGLER, of New Jersey; SILAS N. BENHAM, of Pennsylvania; A. DUNLAP, of Ohio, in place of the seven whose terms expire at this meeting. The rest of the present Council continued.

Committee on Prize Essays.—Drs. SAMUEL D. GROSS, F. G. SMITH, ALFRED STILLÉ, ELLERSLIE WALLACE, and H. C. WOOD, all of Pennsylvania.

Special Committees.—Dr. FRANKLIN STAPLES, of Minnesota, to report on influence of climate on pulmonary diseases in Minnesota.

Dr. CHARLES DENNISON, of Colorado, to report on same in Colorado.

Dr. E. T. SABAL, of Florida, to report on same in Florida.

JAMES R. WOOD, *Chairman.*

JOHN C. HUPP,
Secretary of the Committee.

On motion, the report as read was unanimously adopted.

On motion of Dr. J. MORRIS, Maryland, the following were appointed Trustees of the McDowell Memorial Fund:—

Drs. WASHINGTON L. ATLEE, Pennsylvania; W. H. BYFORD, Illinois; J. M. KELLER and J. D. JACKSON, Kentucky; and J. MARION SIMS, New York.

Dr. L. P. YANDELL, Chairman of Committee on Prize Essays, reported as follows:—

The Committee on Prize Essays beg leave to report that they have received a number of essays, carefully written, and marked by various degrees of merit. But after as careful an examination of them as the committee have had time to make, they are not prepared to recommend any as worthy of the prize offered by the Association. One of the papers submitted to your committee is a work of vast dimensions. It makes four volumes, and an aggregate of more than twelve hundred pages. The committee have found it utterly impracticable in the time at their disposal to look through this elaborate paper. It treats of "Excision of the Larger Joints," and strikes the committee as worthy of a careful examination. They would therefore recommend that it be submitted to a committee of experts, to be reported upon at the next meeting of the Association.

Respectfully submitted,

L. P. YANDELL,
Chairman.

The report was received and the recommendation adopted.

Drs. S. ASHHURST, S. D. GROSS, and D. HAYES AGNEW, of Pennsylvania, were appointed as the committee.

On motion, it was

Resolved, That in consideration of the increased labor upon the Permanent Secretary, instead of $500 the sum of $750 be and is hereby appropriated to compensate him for his services.

On motion, Dr. H. R. STORER was appointed a delegate to the Italian Medical Association.

The hour of 10½ having arrived, Dr. H. I. BOWDITCH, Massachusetts, Chairman of Section on State Medicine and Public Hygiene, delivered his address.

On motion of Dr. DAVIS, the address was referred to the Committee of Publication.

On motion, the resolutions attached were unanimously adopted.

Resolved, That each year, until otherwise ordered, the President elect and the Permanent Secretary be directed to appeal, in the name of the Association, to the authorities of each State where no State Board of Health exists, urging them to establish such boards.

Resolved, That the Permanent Secretary is hereby directed annually to report the names of States where boards of health exist, and also of those which decline to establish them; said report to form a part of the annual proceedings of the Association.

Dr. DAVIS, Illinois, offered the following, which was unanimously adopted:—

Resolved, That in the death of the late Dr. JAS. MCNAUGHTON, of Albany, N. Y., we recognize the loss of one of the earliest, oldest, and most distinguished members of the Association; one who for more than half a century had been a noble example of the upright citizen, the untiring physician, the enthusiastic teacher, and the true Christian gentleman.

Resolved, That a copy of the foregoing resolution be communicated to the family of the deceased.

The minutes and papers of the various sections were reported, and referred to the Committee of Publication.

The President appointed as the Committee on Rank of Medical Corps of the Army: Drs. H. A. JOHNSON, Illinois; J. P. GRAY, New York; E. LLOYD HOWARD, Maryland; GEORGE F. SHRADY, New York; H. C. WOOD, Pennsylvania.

On motion, Dr. E. S. GAILLARD, Kentucky, was appointed a special committee to report on the medical and surgical uses of the aspirator.

The Special Committee of the Section on Obstetrics, etc., recommended that the author of the paper on "Congenital Occlusion and Dilatation of Lymphatic Channels," be permitted to make such use of the material, plates, and illustrations as he may deem proper.

On motion, this was agreed to.

The following, from the State Medical Society of Georgia, was read, and ordered to be entered on the minutes:—

Whereas, As is generally admitted, the rank and pay of the medical officers of the United States Army are not commensurate with the professional standing of its members as a body, nor as they compare in attainment with other army officers;

And whereas, Congress at its last session totally ignored the wishes of the profession, plainly and generally indicated by memorials and petitions from all parts of the country: therefore,

Resolved, That we disapprove of this want of congressional action, and we reaffirm our opinion that the medical officers of the army should receive at least equal rank and pay with the officers of the line of the army, and with the medical officers of the navy.

Resolved, That we endorse the previous action of the American Medical Association on this subject, and recommend to that body renewed effort.

Resolved, That a committee be appointed, to consist of a chairman at large and one member from each congressional district, whose duty it shall be to personally explain to the various members of the Georgia legation the wishes of the physicians of Georgia, as well as to carefully present the matter before Congress.

Resolved, That a copy of these resolutions be laid before the American Medical Association at its approaching meeting, and that the local societies throughout the State be invited to cooperate.

The Permanent Secretary presented a communication from Dr. J. F. HIBBARD, of Indiana, which was, on motion, referred to the Section on Practice of Medicine, etc.

On motion, Drs. E. ANDREWS, of Illinois, and T. KENNARD, of Missouri, were added to the Committee on the special legislation to present the spread of syphilis.

On application of Dr. S. D. GROSS, permission was granted him to use his paper published last year.

The same was granted to Dr. W. H. MUSSEY.

On motion of Dr. BOWDITCH, of Massachusetts, it was

Resolved, That the American Medical Association presents its sincere and hearty thanks to the physicians of Louisville and to the following citizens: Mr. and Mrs. James Trabue, Dr. and Mrs. J. R. Butler, Dr. and Mrs. J. L. Smith, Dr. and Mrs. D. W. Yandell, Capt. and Mrs. James Irwin, Mr. and Mrs. Joseph Tompkins, Mr. and Mrs. Isaac Caldwell, Capt. J. McFerran, Mr. and Mrs. J. Watts Kearney, Mr. and Mrs. J. G. Carter, and other citizens who may have offered civilities to individual members for the unbounded hospitality with which the Association has been received, and to the gentlemen of the press representing the *Courier-Journal*, the *Commercial*, and the *Ledger*.

On motion of Dr. W. S. HUSELTON, of Pennsylvania, it was

Resolved, That a vote of thanks be tendered the ladies of Louisville, for the cordial and hospitable manner in which they have entertained the members of the American Medical Association during its session, thereby adding much to their enjoyment and toward making the visit one long to be remembered.

On motion of Dr. BRODIE, of Michigan, it was

Resolved, That the thanks of the Association be extended to all those railroad and steamboat lines that have commuted their rates of fare to this Association.

On motion of Dr. KELLER, of Kentucky, it was

Resolved, That the thanks of the Association are due and hereby tendered to the agreeable poet and gentleman, Mr. Will S. Hays, the superintendent of the Hall.

On motion, the thanks of the Association were tendered to Dr. EDWARD RICHARDSON, and the members of the Committee of Arrangements, for their untiring energy in making the session of the Association a complete success.

On motion of Dr. DAVIS, the cordial thanks of the Association were tendered to the President and Secretaries for the faithful manner in which they have performed their duties.

The amendments to the Constitution offered at last session were, on motion, indefinitely postponed.

After addresses breathing the warmest friendship, etc., by Drs. BOWDITCH, BALDWIN, GROSS, HANEY, and others, the Association adjourned, to meet on the 1st Tuesday of June, 1876, at Philadelphia.

W. B. ATKINSON,
Permanent Secretary.

STATEMENT OF COMMITTEE OF PUBLICATION.

April 15, 1875.

		On hand at last report.	Since delivered.	Sold by weight.	Remaining on hand April 15, '75.
Volume	I.	6	...	...	6
"	II.	8	...	...	8
"	III.	6	...	...	6
"	IV.	6	...	...	6
"	V.	97	3	44	50
"	VI.	7	...	...	7
"	VII.	8	...	...	8
"	VIII.	145	3	92	50
"	IX.	155	3	102	50
"	X.	69	2	16	51
"	XI.	114	1	61	52
"	XII.	176	3	123	50
"	XIII.	75	1	22	52
"	XIV.	123	2	70	51
"	XV.	123	4	70	49
"	XVI.	262	2	209	51
"	XVII.	60	2	7	51
"	XVIII.	30	1	...	29
"	XIX.	17	3	...	14
"	XX.	3	...	...	3
"	XXI.	7	...	...	7
"	XXII.	209	4	155	50
"	XXIII.	115	8	11	96
"	XXIV.	195	40	21	134
Proceedings		7	...	...	7

Volume XXV.

Printed		800 copies.
Delivered to members, etc.	720	
Delivered to medical journals	24	
Remaining on hand	56	800

REPORT OF THE TREASURER.

Caspar Wister, Treasurer, in account with The American Medical Association.

May 1, 1875—		DR.		
To cash.		Balance	$1930 97	
"	"	Delegates at Detroit	2150 00	
"	"	Permanent members	2146 19	
				$6227 16

May 1, 1875—		CR.		
By cash.		Committee of Arrangements, Detroit, for Stenographing	$207 50	
"	"	Exchange on draft	1 93	
"	"	Dr. Wm. Lee for expenses of library	8 30	
"	"	Wm. B. Atkinson, M.D., as per order of the Association	500 00	
"	"	T. K. Collins, for printing, binding, and plates, for 800 copies of Transactions, Vol. XXV., also circulars and stamps	2003 73	
"	"	Otto & Reynders for electrotypes for illustration of Transactions	14 00	
"	"	Henry Barnes for services as clerk	50 00	
"	"	W. Barber for engraving die	250 00	
"	"	H. C. Lea for cash advanced for postage, freight, etc., used in delivery of Transactions	30 99	
"	"	Wm. B. Atkinson for travelling expenses, postage, etc.	138 30	
				3204 75
Balance on hand				$3022 41

Audited and found correct.

FRANCIS G. SMITH, JR.,
Chairman Committee of Publication.
ALFRED STILLÉ,
D. MURRAY CHESTON,
WM. B. ATKINSON.

REPORT OF THE LIBRARIAN.

LIBRARY OF THE AMERICAN MEDICAL ASSOCIATION,
WASHINGTON, D. C., April 1, 1875.

MR. PRESIDENT:—

I HAVE the honor to report, as Librarian, that during the past year, as shown by the accompanying catalogue, there have been added to the Library seventy-five distinct titles, exclusive of yearly volumes of transactions of societies, reports of hospitals, and boards of health, and volumes of medical journals, where these have been previously catalogued as distinct titles. This addition makes the Library to consist at present of 506 distinct titles.

The Librarian, although anxious to keep the importance and deficiencies of the Library prominently before the members of the Association, can find but little to add to the suggestions made in former reports, save that time, rather than lessening, serves but to add force and application to those suggestions. The resolutions passed at the last meeting empowering the Committee of Publication to exchange copies of the Transactions with all State medical societies and with medical journals have already proved advantageous to the growth of the Library. Thirty-three medical journals now send copies of their issue regularly to the Library. A resolution was also adopted at the same time to the effect that a similar exchange be entered into with the various foreign medical societies. The Librarian would suggest, in regard to this latter resolution, that, in order to relieve the Committee of Publication from this extra duty entailed upon them, a resolution be passed furnishing the Librarian yearly with thirty copies of the Transactions for exchange with foreign medical societies and prominent foreign medical journals, to be accounted for to the Committee of Publication.

Three works presented to the Association at its last (twenty-fifth annual) meeting have failed as yet to reach the Librarian,

viz.: Vital Statistics of New Orleans from 1769 to 1874; a pamphlet, title not given, and a work written by Dr. Valentine Seaman, presented by Mrs. Leggett.

Accompanying this is an account of necessary expenditures during the year; and the Librarian takes this opportunity, in the name of the Association, to express thanks to all those who have contributed to the growth and preservation of the Library, and to hope that members will regard the published catalogue as indicating to them one of their duties as members in attempting to supply its deficiencies from their store of duplicates, odd numbers of medical journals, old pamphlets, and text-books which by the lapse of time no longer meet the requirements of the practitioner of to-day; and to see themselves represented as fully as possible through their own works in what should be considered the National Medical Library.

Respectfully submitted,

WM. LEE,
Librarian.

2111 Pennsylvania Avenue.

CATALOGUE OF LIBRARY.

Catalogue of Additions, by Donations, to the Library of the American Medical Association, from April 1st, 1874, to April 1st, 1875.

Army Medical Department, United States. Catalogue of the Library of the Surgeon-General's Office, United States Army. 3 vols. 8vo. Washington, Government Printing Office, 1873–1874. Donor, Surgeon-General's Office, U. S. A.

Army Medical Department, United States (Regulations). Washington, 1856. 12mo. pp. 67. Donor, Wm. Lee, M.D.

Bulkley (L. Duncan). Herpes Gestationis: a rare affection of the skin, peculiar to pregnancy—reprinted from the American Journal of Obstetrics and Diseases of Women and Children. Vol. VI., No. IV. February, 1874. New York: William Wood & Co., 1874. 8vo. pp. 32. Donor, Author.

Busey (Samuel C.). The Gathering, Packing, Transportation, and Sale of Fresh Vegetables and Fruits. Competent inspection and free markets for producers. (Read before the American Public Health Association, Philadelphia, 1874.) (Reprint from the Sanitarian, April, 1875.) 8vo. pp. 15. New York, 1875. Donor, Author.

Caldwell (John J.). Electricity as a Restorative Agent in Narcosis and Asphyxia. (Reprint from Virginia Medical Monthly, November, 1874.) 8vo. pp. 8. Donor, Author.

Cinchonidia, On Sulphate of, and other cheap Alkaloids of Cinchona Barks. Powers & Weightman, Philadelphia. 12mo. pp. 23. Donor, Wm. Lee, M.D.

Colleges, Medical. Announcements, Catalogues of, and other matter concerning Medical Institutions—

California. Toland Medical College, San Francisco. Announcement, 9th, 1872. Donor, Wm. Lee, M.D.

Connecticut. Yale College, Catalogue. 1874–1875. Donor, College.

District of Columbia. National Medical College of the Columbian University. Announcement and Catalogue of, Fifty-third, 1874–1875. Donor, Wm. Lee, M.D.

Georgia. Atlanta Medical College. Report of the Delegate of the Fulton County Medical Society, with the report of its committee. Note embracing history of controversy and other reports in full. 8vo. 102 pp. Atlanta, 1871. Donor, Wm. Lee, M.D.

Illinois. Chicago University. Announcement, 11th Annual, 1869–70. Donor, University.

Iowa. State University, Medical Department. Iowa City. Announcements, 2d, 1871–72, 1874–75. Donor, Wm. Lee, M.D.

Kansas. City College of Physicians and Surgeons. Announcement, 3d, 1871–72. Donor, Wm. Lee, M.D.

Kentucky. University of Louisville, Medical and Law Departments. Annual Announcement, 38th, 1874–75.

Maryland. University of, School of Medicine of the, Annual Circular, Baltimore, 62d, 1872. Donor, Wm. Lee, M.D.

Missouri. St. Louis Medical College. Catalogue and Announcement, 33d, 1874–75. Donor, College.

New York. Albany Medical College, Union University. Circular and Catalogue, 1874. Donor, Wm. Lee, M.D.

New York. Geneva Medical College. Announcement, 1871–72. Donor, Wm. Lee, M.D.

New York. Long Island College Hospital, Brooklyn. Annual Announcements and Circulars, 1873–74, 1874–75. Donor, Wm. Lee, M.D.

Nova Scotia. Dalhousie College and University, Halifax. Annual Announcement, 1st, 1868, 3d, 7th. Donor, Wm. Lee, M.D.

Ohio. Miami Medical College of Cincinnati. Announcement, 15th, 1874–75. Donor, Wm. Lee, M.D.

Tennessee. Vanderbilt University Department of Medicine and Surgery, Nashville. Announcement, 1st, 1874–75. Donor, College.

Vermont. University of, Medical Department. Announcement, 22d, 1875. Donor, Wm. Lee, M.D.

Dunglison (Richard J.). The Public Medical Libraries of Philadelphia. 8vo. pp. 46. Philadelphia, 1871. (Reprint from the Medical Times.) Donor, Author.

Eve (Paul F.). Amputation at the Hip-joint, complicated by complete ankylosis. Death in twenty-five hours. Read before the State (Tennessee) Medical Society, April, 1871. 8vo. pp. 7. Donor, Author.

Eve (Paul F.). Annual Address before the Tennessee Medical Society. A synopsis of its history. 8vo. pp. 20. Louisville, Ky., 1873. Donor, Author.

Eve (Paul F.). A Synopsis and Analysis of One Hundred Cases of Lithotomy, Lithotrity, etc. Extracted from the Transactions of the American Medical Association. 8vo. pp. 10. Philadelphia, 1871. Donor, Author.

Eve (Paul F.). Esmarch's Bloodless Operation on the Extremities, with cases. (Prepared for State Medical Society.) 8vo. 6 pp. Donor, Author.

Eve (Paul F.). Lithotomy: Removal of a Calculous Mass, deposited on a piece of bougie; being the nineteenth bilateral operation, with only two deaths in the last forty-five cases, and these independent of it; and moreover, without ever having refused a single applicant of the one hundred and three, for relief. 8vo. 7 pp. Nashville, 1873. From the Richmond and Louisville Medical Journal of May, 1873. Donor, Author.

Eve (Paul F.). The Inhumanity of Capital Punishment by Hanging. (From October No., Richmond and Louisville Medical Journal.) 8vo. pp. 12. Louisville, 1872. Donor, Author.

Fitch (S.). Peculiarities in the Operations of the Three Great Ovariotomists: Wells, of London; Atlee, of Philadelphia; and Thomas Keith, of Edinburgh. Philadelphia: J. B. Lippincott & Co., 1872. 12mo. pp. 16. Donor, Wm. Lee, M.D.

Hospitals. Asylums, Dispensaries, and Infirmaries. Reports and Documents relating to.

District of Columbia. Children's Hospital. Annual Report of the Board of Directors. Washington, 4th, for 1874. Donor, S. C. Busey, M.D.

District of Columbia. Columbia Hospital for Women and Lying-in Asylum. Constitution, By-Laws, and List of Officers. Washington, 1871. Donor, Wm. Lee, M.D.

Maryland Eye Infirmary. Annual Report of the Surgeon-in-Charge to the Board of Trustees. Baltimore, 8vo., 1st, 1870. Donor, Wm. Lee, M.D.

Massachusetts State Lunatic Hospital at Northampton. Annual Report of the Trustees to the Governor of the State. Boston, 8vo., 1874. Donors, Trustees.

Pennsylvania Hospital for the Insane. Reports of, by Thomas S. Kirkbride, M.D., Physician-in-Charge and Superintendent. Philadelphia, 8vo., 1871, 1875. Donor, Thos. S. Kirkbride, M.D.

Pennsylvania, Western, Hospital (for the Insane at Dixmont). Annual Report of the Managers to the Legislature. 8vo. Pittsburg, 1874, Donor, J. A. Brooks, M.D.

Rhode Island. Butler Hospital for the Insane. Annual Reports of the Trustees and Superintendent. 8vo. Providence, 1871, 1874. Donor, John W. Sawyer, M.D.

Virginia, Western, Lunatic Asylum of, at Staunton. Annual Report of the Board of Directors and Medical Superintendent. 8vo. Richmond, 1874. Donor, Board of Directors.

West Virginia Hospital for the Insane. Annual Report of the Directors and Superintendent to the Governor of the State. 8vo. Charleston, 1874. Donor, John C. Hupp, M.D.

West Virginia, Institution for the Deaf and Dumb and Blind at Romney. Annual Report of the Board of Regents. 8vo. Charleston, 1874. Donor, John C. Hupp, M.D.

Hygiene, Public—

California State Board of Health. Second Biennial Report. Sacramento, 1873. Donor, Board of Health.

California, San Francisco, Health Officer. Report of. 8vo. San Francisco, 1874. Donor, Henry Gibbons, Jr., M.D.

District of Columbia. Report of the Committee on Disinfectants, made to the Board of Health of Washington, 1867. 8vo. pp. 15. Donor, Wm. Lee, M.D.

Great Britain. Annual Report of the Medical Officer of the Privy Council (to the Lords of her Majesty's most honorable Privy Council), with Appendix. London, 8vo., 13th, 1870. Donor, Wm. Lee, M.D.

Michigan State Board of Health. First Annual Report. Lansing, 1874. Donor, Henry B. Baker, M.D.

Philadelphia. Report of the Board of Health for the City and Port of, 1873. Donor, Wm. B. Atkinson, M.D.

Jones (Lewis G.). Health Exercise: the rationale and practice of the lifting cure, or health lift. 7th ed., 8vo. pp. 54. New York, 1873. Donor, Wm. Lee, M.D.

Periodicals—

American (The) Journal of Dental Science. Edited by F. G. S. Gorgas. M.D., D.D.S. Monthly. Baltimore: Snowden & Cowman. Vol. IV., Nos. 8 to 12; V., 1 to 5, 7 to 12; VI., 1 to 5; VII., 2, 7, 10, 12; VIII., 1 to 11. Donor, Editor.

American (The) Medical Times. Being a weekly series of the New York Journal of Medicine. Edited by S. Smith, E. Harris, and G. F. Shrady. Donor, Wm. Lee, M.D. Vol. III., Nos. 13 to 19; IV., 6 to 13; V., 15, 16; VI., 1 to 23, 25, 26; VII., 1 to 8, 10 to 26; VIII., 1 to 4, 6 to 26; IX., 1 to 10.

American (The) Medical Weekly. Louisville, Kentucky. E. S. Gaillard. Editor and Proprietor. Donor, Editor. Vol. I., No. 1; II., 7 and 12.

Archives of Dermatology. A Quarterly Journal of Skin and Venereal Diseases. Edited by L. Duncan Bulkley, New York. Donor, Editor. Vol. I., No. I. (Oct. 1874).

Archives of Electrology and Neurology: A Journal of Electro-Therapeutics and Nervous Diseases. Edited by George M. Beard, New York. Donor, Editor. Vol. I., Nos. 1 (May, 1874) and 2.

Atlanta (The) Medical and Surgical Journal. Edited by Robert Battey and W. F. Westmoreland. Monthly. Donors, Editors. Vol. XII., Nos. 8 to 12.

Baltimore (The) Medical Journal and Bulletin. Editors and Proprietors, E. Lloyd Howard and T. S. Latimer. Monthly. Donor, Wm. Lee, M.D. Vol. II., Nos. 4, 5, 6, 8, 9, 10.

Baltimore Physician and Surgeon. Published monthly under the auspices of the College of Physicians and Surgeons. Donor, Augustus F. Erich, M.D., Chairman of the Publication Committee. Vol. II.; III., 1, 2, 3.

Bistoury (The). A Quarterly Journal devoted to the Exposition of Charlatanism in Medicine, and the Education of the People upon Medical Subjects. Thad. S. Up de Graff, Editor, Elmira, N. Y. Donor, Editor. Vol. X.

Boston (The) Journal of Chemistry, devoted to the Science of Home-Life, the Arts, Agriculture, and Medicine. Monthly. Boston: Billings, Clapp, & Co. Donors, Publishers. Vol. II., No. 1; VIII., 10 to 12; IX., 1 to 9.

Boston (The) Medical and Surgical Journal. Edited by J. V. C. Smith. Weekly, 2 vols. annually. Donor, Wm. Lee, M.D. New Series, Vol. VII., Nos. 16 to 26. VIII., 1 to 4, 7 to 19, 21 to 26; IX., 1 to 3.

Buffalo (The) Medical and Surgical Journal. Edited by Julius F. Miner and Edward N. Brush, Buffalo. Donor, Editors. Vol. XIII., Nos. 8, 10, 11.

California Medical Gazette: A Monthly Journal of Medical and Surgical Science. Edited by J. D. B. Stillman and W. F. McNutt. San Francisco: A. Roman & Co. Donor, Wm. Lee, M.D. Vol. II., No. 20.

Chemical (The) News and Journal of Physical Sciences. Edited by Wm. Crookes. American Reprint. New York: W. A. Townsend & Adams. Donor, Wm. Lee, M.D. Vol. I., No. 5.

Chicago (The) Druggist's Price Current. Monthly. Published by James Barnet, Donor, Publisher. Vol. III., Nos. 10, 12; IV., 1, 3.

Chicago (The) Journal of Nervous and Mental Disease. Edited by J. S. Jewell, assisted by H. M. Bannister. Quarterly. Donors, Editors. Vol. I., Nos. 2 to 4.

Chicago Medical Times. Monthly. Anson S. Clark, H. D. Garrison, Editors. Donors, Editors. Vol. VI., Nos. 1, 2, 4.

Cincinnati (The) Lancet and Observer. J. C. Culbertson, Editor. Donor, Editor. Vol. XVII., Nos. 4, 5, 8, 9, 10, 11; XVIII., 1 to 4.

Cincinnati (The) Medical Advance. Homœopathic. T. P. Wilson, General Editor. Monthly. Vol. II., Nos. 3, 5, 7, 8.

Cincinnati (The) Medical News. J. A. Thacker, Editor. Monthly. Donor, Editor. Vol. III., Nos. 10, 12; IV., 1, 3.

Dental (The) Register of the West. Edited by J. Taft and George Watt. Monthly. J. D. Thorpe, Cincinnati. Donors, Editors. Vol. XXV., No. 6.

Detroit (The) Review of Medicine and Pharmacy. Edited by George P. Andrews, E. W. Jenks, and A. B. Lyons. Monthly. Donors, Editors. Vol. IX., Nos. 7, 11, 12; X., 1 to 4.

Doctor (The). A Monthly Review of British and Foreign Medical Practice and Literature. London. Donor, Wm. Lee, M.D. Vol. I., Nos. 9, 10, 11; II., 1.

Indiana Journal of Medicine. Indianapolis. Thad. M. Stevens, Editor. Donor, Editor. Vol. V., Nos. 10, 11.

Journal of Materia Medica. Devoted to Materia Medica, Pharmacy, and Chemistry. Conducted by Joseph Bates and H. A. Tilden. Monthly. New Lebanon, N. Y. Donor, Wm. Lee, M.D. Vol. VI., Nos. 8 to 12; VII., VIII. (No. 9 wanting); IX., X., XI., XII. (No. 2 wanting); XIII. XIV., 1, 2.

Journal of Materia Medica, Supplement to, containing a brief summary of the Action and Uses of the Principal Articles of the Materia Medica; together with the Analysis of the Principal Mineral Waters of Europe and the United States. 2d ed., 8vo., pp. 206. New Lebanon, N. Y. Tilden & Co., 1868. Donor, Wm. Lee, M. D.

Lancet (The). A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Public Health, Criticism, and News. Weekly, 2 vols. annually. London. Donor, Wm. Lee, M.D. Vol. II., 1870, No. XXVII.; II., 1871, III.; and I., 1874, XIX.

Medical (The) Bulletin. A Journal of Medicine and Surgery. Edited by Edward Warren. Semi-monthly. Baltimore. Donor, Wm. Lee, M.D. Vol. I., Nos. 1, 2.

Medical (The) Examiner. A Semi-monthly Journal of Medical Sciences. Edited by N. S. Davis and F. H. Davis. Chicago. Donors, Editors. Vol. XV., Nos. XX. to XXIV.; XVI., I. to VI.

Medical (The) Gazette. A Weekly Review of Practical Medicine, Surgery, and Obstetrics. Published by H. W. Turner, New York. Donor, Publisher. Vol. V., No. 5; VI., 1, 2, 3, 5, 7, 8, 9, 13.

Medical (The) Herald. Published monthly. Tiffin Sinks, Editor and Proprietor. Leavenworth, Kansas. Donor, Editor. Vol. VII., Nos. 10, 11, 12; VIII., 1 to 9.

Medical (The) News and Library. Monthly. H. C. Lea, Philadelphia. Donor, Wm. Lee, M.D. Vol. XXVI., No. 310; XXIX., 341 to 344. 347, 348.

Medical (The) Press and Circular. Weekly. London, Dublin, and Edinburgh. Old Series, Vol. LXIX.; New Series. Vol. XVIII., No. 1.

Medical Record. A Semi-monthly Journal of Medicine and Surgery. Edited by G. F. Shrady. New York: Wm. Wood & Co. Donors, Wm. Lee, M.D., and Editor. Vol. I., No. 17, III., 53, 71; V., 18; VI., 11, 12, 14, 16, 18 to 22; VII., 1, 3, 4, 5, 7 to 20, 22; IX., 6, 7, 8, 9, 11, 21 to 24; X., 1 to 13.

Medical (The) Register and Advertiser. A Quarterly Journal of Scientific and Practical Medicine. Edited by James J. Hale. Anna, Illinois. Donor, Editor. Vol. I., 1 (Feb. 1875).

Medical (The) and Surgical Reporter. A Weekly Journal by S. W. Butler. Edited by D. G. Brinton. Donor, Editor. Vol. XXI., Nos. 19 to 26; XXII., 1 to 13.

Missouri Clinical Record. A Monthly Journal of Medicine and Surgery. Editor, W. A. Hardway, Saint Louis, Missouri Medical Library Association. Donor, Editor. Vol. I., Nos. 2 to 7, 10, 11.

Missouri (The) Dental Journal. Saint Louis. Monthly. W. H. Eames. Editor. Donor, Editor. Vol. VI., Nos. 4, 5.

Nashville (The) Journal of Medicine and Surgery. Edited by William K. Bowling and William T. Briggs. Monthly. Donors, Editors. Vol. XIII., Nos. 3 to 6; XIV., XV., 1, 2, 3.

New York (The) Medical Independent and Pharmaceutical Reporter. Edited by the New York Medical Literary Association. Weekly. T. B. Harrison & Co. Donor, Wm. Lee, M.D. Vol. I., Nos. 1 to 10, 14, 16.

Obstetrical (The) Journal of Great Britain and Ireland, including Midwifery, and the Diseases of Women and Children. Edited by J. H. Aveling and A. Wiltshire. With an American Supplement, edited by William F. Jenks. Monthly. Philadelphia: H. C. Lea. Donor, Wm. Lee, M.D. Vol. I., No. 2.

Pacific (The) Medical and Surgical Journal. Editors and Proprietors, Henry Gibbons and Henry Gibbons, Jr. Monthly. San Francisco: Wintesburn & Co. Donors, Editors. Vol. IV., No. 44; XV. (VII.), 11, 12; XVI. (VIII.), 1 to 10.

Pharmacist (The). A Monthly Journal of Pharmacy, Chemistry, and the Collateral Sciences. Published by the Chicago College of Pharmacy. Edited by Albert E. Ebert. Donor, Editor. Vol. VII., Nos. 4 to 10, 12; VIII., 1, 3.

Philadelphia Medical Times. A Weekly Journal of Medical and Surgical Science. Philadelphia: J. B. Lippincott & Co. Donors, Wm. Lee, M.D., and Editors. Vol. II., Nos. 28, 30; III., 51; IV., 137; V., 155 to 166.

Physician (The) and Pharmacist. E. H. M. Sell. Quarterly. New York. Donor, Wm. Lee, M.D. Vol. 3, No. 4; Vol. 4, Nos. 1, 2; Vol. 7, Nos. 3, 4; Vol. 8, No. 1.

Physician's (The) Monitor. A concise repertory of useful information for the medical practitioner. New York: W. A. Townsend. Donor, Wm. Lee, M.D., 1873, 1874.

Provincial (The) Medical Journal. Edited by W. B. Slayter, E. Farrell, and R. W. McKeagney. Quarterly. Halifax, N. S. Donor, Wm. Lee, M.D. Vol. I., No. 3.

Richmond (The) and Louisville Medical Journal. E. S. Gaillard, Editor and Proprietor. Monthly. Louisville, Ky. Donor, Editor. Vol. XII., No. 2; XIII., 3; XVIII., 4, 5; XIX., 2, 3.

Sanitarian (The). A Monthly Journal. A. N. Bell, Editor. New York and Chicago: A. S. Barnes & Co. Donor, Editor. Vols. I., II., III., No. XXV.

Southern (The) Medical Record. A Monthly Journal of Practical Medicine. Editors, T. S. Powell et al. Atlanta, Georgia. Southern Publishing Company. Donors, Editors. Vol. IV., Nos. 4 to 12; V., 1, 2.

Virginia (The) Medical Monthly. Laudon B. Edwards, Editor and Proprietor. Donor, Editor. Richmond. Vol. I.

Western (The) Lancet. A Monthly Journal devoted to Medicine, Surgery, and the Collateral Sciences. Edited by Eustace Trenor and Heman P. Babcock. San Francisco. Donor, Wm. Lea, M.D. Vol. I., No. 2.

Western Medical Advance and Progress of Pharmacy. Edited by W. H. Lathrop. Quarterly. Detroit. Donor, Wm. Lee, M.D. Vol. I., No. 2.

Prisons—

West Virginia Penitentiary at Moundsville. Reports of the Board of Directors. 8vo. Charleston. Donor, John C. Hupp, M.D. For 1874.

Public Charities—

Great Britain. Report of the Local Government Board (to the Queen's most excellent Majesty). First Report, 1871–72. London, 1872. 8vo. pp. 522. Donor, Wm. Lee, M.D.

Pennsylvania. Fifth Annual Report of the Board of Commissioners of Public Charities of the State of. Harrisburg, 1875. 8vo. pp. 304. Donor, John C. Hupp, M.D.

Registration—

Michigan. Annual Reports of the Secretary of State of, relating to the Registry and Return of Births, Marriages, and Deaths. 5th Annual. Lansing. 8vo., 1874. Donor, Henry B. Baker, M.D.

Societies—

Alabama, Medical Association of the State of, Transactions of, for 1874. Donor, Association.

American Medical Association. Transactions of the. Volume XXV.

China, Medical Missionary Society in, Reports of the, for the years 1871, 1872, 1873. Hong Kong: De Senza & Co. Donor, J. W. Bennet. Brookhaven, Miss.

District of Columbia. Academy of Medicine of Washington, An Address delivered before the, by Joseph Taber Johnson. Reprinted from the National Medical Journal, 1871. 8vo. pp. 22. Donor, Wm. Lee, M.D.

Indiana State Medical Society. Transactions of the. Indianapolis. 8vo., 1871, pp. 248, illustrated. Donor, Wm. Lee, M.D.

Michigan State Medical Society. Transactions of the. Lansing, 1874. Series II., Vol. VI. Donor, Society.

Minnesota State Medical Society. Transactions of the. St. Paul, 8vo., 1871. Donor, Wm. Lee, M.D.

North Carolina Medical Society. Transactions of the. 21st Annual Meeting. Raleigh, 8vo., 1874. Donor, Society.

Pennsylvania. Medical Society of the State of, Transactions of the. Vol. X., Part 1. Donor, Wm. B. Atkinson, M.D.

South Carolina Medical Association, Transactions of the, for 1874. Donor, Henry D. Fraser, M.D.

Texas State Medical Association. Proceedings of the. Galveston, 8vo., 1870. Donor, Wm. Lee, M.D.

West Virginia State Medical Society. Transactions of the. 8vo., 1874. Donor, Society.

Toner (J. M.). Contributions to the Annals of Medical Progress and Medical Education in the United States before and during the War of Independence. Washington, 1874. 8vo., pp. 118. Donor, Author.

White (Jas. P.). A Report of the Reduction of Two Cases of Chronic Inversion of the Uterus. Extracted from the Transactions of New York State Medical Society for 1874. Albany, 1874. 8vo., pp. 13. Donor, Author.

Wood (Horatio C.). A Study of the Nature and Mechanism of Fevers (being Lecture IV. of the Toner Lectures). Washington. Smithsonian Miscellaneous Collections, 282. 8vo., pp. 45. Donor, J. M. Toner, M.D.

Yandell (D. W.). Reply to the attack of Dr. E. S. Gaillard (reprinted from the American Practitioner for July, 1871). Louisville, 1871. 8vo., pp. 20. Donor, Wm. Lee, M.D.

Zachos (J. C.). The Butler Health Lift: Its Reasons and its Facts. 4th Edition, New York: Lewis G. Jones, 1874. 12mo., pp. 64. Donor, Wm. Lee, M.D.

ADDRESS

OF

W. K. BOWLING, M.D.,

PRESIDENT OF THE ASSOCIATION.

ADDRESS OF W. K. BOWLING, M.D.,

PRESIDENT OF THE ASSOCIATION.

GENTLEMEN OF THE AMERICAN MEDICAL ASSOCIATION:—

IT is eminently proper that we should publicly acknowledge our profound thankfulness to the Great Giver for permission to see each other again in the flesh, and, under His beneficent guidance, to go forward with the work assigned this organized gathering of the brethren—an organization of earnest representative professionals, whose fields of labor extend from ocean to ocean, and from the lakes to the gulf, an area of almost inconceivable extent, recognizing every climate, and capable of almost all the productions of the earth; so that, should a ripple here and there mark the surface of our proceedings, let the astonishment it awakens be that it was not a wave instead. The seaboard, with its vast commercial marts, wealth, and concomitant refinement, has its delegates here; the inland sea, whose borders are just becoming instinct with human life, and whose peoples have widened the area of possibilities, with cities, seemingly the creations of fancy rather than mammoth realities, is represented; the dwellers amid the Appalachian hills, and in the cañons of the Sierra Nevada, have here their professional aspect represented; and that plain on which their waters are shed, so vast that an attempt at mental measurement confuses the imagination, and bewilders thought, has its great workers here.

A National Association of Medical Men was without precedent when this was ushered into existence, by the genius of one man, watered by his parental solicitude, and sustained by the coöperation of his brethren—all stimulated by a common hope that good must come of it, in cementing the brotherhood in unity of purpose, and intensifying its power for the achievement of good to the profession and consequently to the public at large. Thus organized, and freighted with the hopes and blessings of every

loyal medical heart in the country, it has literally drifted through a generation. Composed of the representatives of wide-spread and independent medical masses, with many-sided hopes and aspirations, many with a freedom of thought and expression peculiar to their latitudes, it has seemed, in turn, to delight in representing every shade of medical politics. But it still lived, and every year its ancient friends met new representatives in council, and renewing their allegiance, lighted again their torches at its altar. The contributions of old and new were printed, and, in a bound book, sanctified to posterity.

It is good occasionally to recall the grand objects its founders hoped to achieve through its instrumentality. They were—

First—To give emphatic expression to the views and aims of the medical profession in this country.

Second—To supply more effectual means than have hitherto been available here for cultivating and advancing medical knowledge.

Third—To elevate the standard of medical education.

Fourth—To promote the usefulness, honor, and interest of the medical profession.

Fifth—To enlighten and direct public opinion in regard to the duties, responsibilities, and requirements of medical men.

Sixth—To excite and encourage emulation and concert of action in the profession.

Seventh—To facilitate and foster friendly intercourse between medical men.

Eighth—To take cognizance of the common interest of the medical profession in every part of the United States.

Organized for the achievement of eight distinct purposes, which, in the aggregate, if accomplished, were to confer upon the profession of Medicine in America a glory which the ages had not vouchsafed to it in any country under heaven.

It must be right that the memories of the older members of the Association should be refreshed by occasional recurrence to the grand objects contemplated in the beginning, and that members of more recent date might have definitely set before them to what ends their labors were to be consecrated. With this view, the occasion would invite allusions to these various objects; and

First. "To give emphatic expression to the views and aims of the medical profession in this country." These views and aims, in all their breadth and depth, twenty-six meetings of this body

have emphasized in an unmistakable manner; nor were the aims and views of any body of men known to history ever stamped with a higher honor or a design more unselfish or exalted.

Second. "To supply more efficient means than have hitherto been available here for cultivating and advancing medical knowledge." To show that this has been accomplished, we need only point to the splendid library, rich in every department of medicine, of which this organization is at once author and publisher—a library that will be the wonder of coming ages, recording and preserving the precious thoughts of original American Medical writers, who, many of them, but for this encouragement, had hardly committed them to paper.

Third. "To elevate the standard of medical education." To this, what can we say?—what shall we say? Reports upon this subject, by committees regularly appointed, are among the most eloquent and philosophical papers of the Transactions of this body. Never did the great and faithful of any calling lavish a greater expenditure of logic, illuminated with genius and learning, to secure its recognition among the noble as worthy of their sympathy and support, than have those to whom the duty was assigned by this body to devise the best means to elevate the standard of medical education. The desire for its accomplishment seemed to be felt by all, but how it was to be accomplished was apparent to none. Not unlike the efforts of the alchymist, the very failure inspired new struggles—the greater the obstructions the more potential the forces invoked to remove them. The Association deserved success. The schools were the janitors at the portals of the professional temple, and their competition and rivalry to secure numbers, measured the standard of medical education. Then sprang up the antagonism between the schools and the Association, which ran through a period of seventeen years. As the efforts of the alchymists were not lost, though the myth of philosophy eluded their grasp, so also the Association triumphed in what was considered a defeat.

Our chivalric fathers abhorred the standard of rebellion, and urged upon king and people, with an eloquence which, for pathos and sublimity, is without parallel in English literature, beseeching only the recognition, upon the part of the Ministry, of the rights and privileges of British subjects. For a maintenance of these a war was forced upon them, that ended in converting a British subject into an American freeman! Our English ances-

tors, from disputes about privilege and prerogative, flew to arms to establish the equipoise, which ended in the overthrow of the one and an unhealthy augmentation of the other—failed in the establishment of a republic, but broke forever the backbone of insolent prerogative. A clash of ideas in France ended in an appeal to arms. The King was the State. The revolution of 1789 ensued, since which, amid innumerable changes, there has been none that does not make haste to declare that the people are the State! This great good not struggled for, Providence has secured to the French, who had vainly waded through blood for the achievement of almost everything else. Short-sighted man has thus overruled, for his good, his most heroic efforts in an opposite direction. In our own short history as a country, within the recollection of us all, stupendous sacrifices solved a problem undreamed of by those who precipitated them; and the history of mankind is luminous with similar examples; and those among us conversant with it are neither surprised nor disappointed that this organization, in all the years it has met and resolved and reported, finds itself as far as ever from the achievement of that desideratum adumbrated, by its initial convention, as the chief end of its creation.

The Colleges, borrowing a word from the politicians, and recognizing the Association as National, opposed, through their accredited organs, any centralizing tendency. Medical schools multiplied, and each, while adopting the Code of Ethics suggested by the Association, and proud of being represented in it, was unwilling to concede to it any power over its local affairs, and thus, for a quarter of a century, they seemed antagonizing forces. The natural rivalry of the schools would suggest the power of the Association to aid ends honorably labored for, which would as naturally stimulate opposition. If one school sought to strengthen itself and augment its classes by obedience to the behests of the Association, its rival was as certain to oppose change as evidence of decay, and thus strengthen itself by a recognition of the landmarks of the fathers, and a determination to deepen their footprints by walking in them.

Meanwhile the Association, in vibrating now towards one, and anon to the other of these extremes, seemed attempting that difficult equestrian feat of riding, at the same time, horses running in opposite directions. The schools, while denying the authority of this body to prevent them doing as they pleased, were not

indisposed to invoke its countenance in favor of any peculiarity to which any of them committed themselves. While its Transactions, therefore, exhibit it as a gallant ship, struggling to make headway when directly opposed by the wind, with its prow, during the effort, turned to every point of the compass, yet the skilful navigator knew, notwithstanding, that she was edging up slowly but certainly in the right direction; and the belief of this truth has sustained its friends from the beginning, and secured their cheerful attendance, when the less observing could see no future from which the clouds did not shut out the light of heaven. Such did not stop to consider how vast was the country here represented, and how widely different the outward circumstances of the men that constituted the Association at any one meeting—one from a Western wilderness, who, like Fanny Fern's father-in-law, would have to ride through the rain six miles, along a bridle-way, of a dreary December night, and pull a tooth for twenty-five cents, sitting beside a "brother" whose knife took to blood at a hundred dollars a drink a long time ago, and now wants more, and who visits his patients on silken cushions, housed in his two-horse *coupé*, along thoroughfares as smooth as a marble-top table. No representative body on earth is composed of men who, while all good and true, yet like this, presents to the outward world aspects so diversified, so unlike, so seemingly opposite. To secure an *esprit de corps* among such representatives requires more than a year, more than a decade, more than a generation. The country which they represent is yet in its infancy, and its population, like its language, after a good Anglo-Saxon foundation, is mixed in its composition with the representatives of all the countries under heaven, and a blending, fusion, and consolidation of their descendants into that homogeneous nationality adumbrated by its motto—"*out of many, one*"—must occur before its higher civilization can avow itself American.

A departed member of this body has eloquently shown how that process has been going forward in what he delights to call the Great Interior Basin of North America, from the beginning, and which must be completed before we can present a national type which shall distinguish the North American, as the Spaniard or the Frenchman is distinguished. The diversity which characterizes a community in general must apply equally to any special calling, as its preachers, its lawyers, and its doctors. His-

tory reveals to us the tenacity of traditions, and that many succeeding generations rise, flourish, and go down to the tomb, unable to resist them, while not in words acknowledging their teachings. Communities thus compounded will find the same want of harmony among those they consecrate to special professional life as exists among themselves.

We offer this apology for any absence of persisting effort in one direction that may be chargeable to this body, composed, as it is, after its permanent members, by representatives annually chosen, and the bulk in attendance living nearest the place of meeting. These things considered and allowed, our meetings have been as harmonious as could be reasonably expected. Still, to return to the ship, that universal metaphor, the ocean it navigates knew rather more of storm than calm, and thinking men cast about for some Jonah on board, who, pitched into the surging sea, might prove as oil to its troubled waters.

At Nashville, eighteen years ago, amid a storm of school representatives in this Association, a resolution was introduced to so change our Constitution as to keep the representatives of schools and hospitals, as such, out of this body. Under the rule, it must wait a year for consideration. It was called up the next year at Washington, after great excitement about hospital representatives, and was lost by almost a unanimous vote. In 1869, at New Orleans, the same proposition was made. A greater storm at the meeting in Washington, in 1870, from school representatives, caused deeper thought upon the subject, and at Detroit, last year, seventeen years after the Nashville resolution, to the unspeakable joy of many, the Constitution was so amended as to give a permanent quietus to this disturbing element, and assurance of a calmer future.

As in the structure of our National Constitution concessions were necessary to secure its adoption, which insured subsequent disaster, only second in importance to its defeat, yet, as that defeat was to insure the overthrow of the temple of liberty then being erected, the most exalted patriotism did not hesitate, hoping that a little time would so consolidate its elements as to make it impregnable to any assault invoked by the very weaknesses necessary to secure its existence; so with our organization: but for the important concessions made to schools and hospitals in the beginning, it might never have existed, but, life being thus infused into it, each succeeding year contributed to its unity and power,

strengthening it against the destructive tendency of an inherent constitutional defect, and finally enabling it to rid itself of it forever.

Other changes of less importance have, from time to time, lent their aid towards securing for our Society as much of finish and beauty as are compatible with the imperfection of the human understanding. By the aid of committees, all disturbing influences, such as once convulsed the Assembly, are quietly disposed of, and a stranger present during hours of business would regard it as equal in dignity and decorum to any representative body in the world. Though a little late, perhaps, in arriving at the full proportion and stature of manhood, the induration of its ligaments, fusion, and condensation of parts, with general unity and individuality, are doubtless the more perfect, and, in consequence, giving earnest of prolonged youth and an old age that shall know no decay. As of man so with his works—from the beginning of his life to manhood, his entire existence revolves around himself. The first third of his life he must devote to himself. He may afterwards bless his kind with new creations or discoveries—become a Moses or a Washington. All the past years of the existence of the Association were necessary to its own development—for its crystallization, the hardening of its shell and elaboration of its organs—all this for itself. It may now look abroad for the accomplishment of ends worthy of so prolonged an apprenticeship. Can it now, in the glory of its early manhood, take any profitable step towards the greatest end indicated by its fathers, and thus accomplish all the objects of its creation? Or shall it, after all the waiting in hope all these years, for its maturity, concede that its creation was a mistake, and its existence a failure?

If, then, this body has not of itself accomplished all its friends hoped for in the beginning, in elevating the standard of medical education, they must be satisfied to know that that standard, notwithstanding, has been regularly going up, fully abreast with the progress of our new country in every other department of human learning, and all the arts and appliances of a rapidly developing civilization. The spring can only well up the waters sent to it, purifying them in the process, and the sea is but the representative of many waters. The schools must take such material as they can get, and make the most of it, and the American Medical Association, as in the past, so now and hereafter, is obliged to consist of such representative medical men as the schools may

prepare and fashion for its use. The stream cannot rise higher than its sources. A vast area, with a thin spread population, "few and far between," may only boast of a log-cabin school-house, so remote from the scattered homes of many that a far-away boy is indebted to his pony for ability to reach it. He learns to read, and thus possesses himself of a magic key to store-houses "undreamed of in his philosophy," but his wildest reverie never sketched the shadowy outline of a college of any kind. Natural bone-setters and seventh sons may be blessings in an emergency, but the urgent medical wants of any community soon reach immeasurably beyond their ability, and the pony boy, who "reads like a book," is proud to see his parents besieged by their neighbors to make a doctor of him. A copy of *Thomas's Blunderbus*, redeemed from kindred loft rubbish, is procured for him, and he goes into it with all his might; and from the beginning of January to the end of September, he reads it through six several times, from contents to index, inclusive. He gets an idea of a medical college from this book, and, after a consultation with the blacksmith, writes, pretty much at random, to the President of a medical college of some distant city, where he imagines there ought to be such a contrivance of human ingenuity to help young gentlemen engaged in prosecuting their studies under difficulty. He is soon startled and surprised with a kind reply, and a "catalogue" thrown in. Kith and kin are laid under contribution to raise the required sum; the whole neighborhood is astir in lending a helping hand, and at the end of a week our hero, with huge saddle-bags, is astride his ever faithful pony, with blessings, like a storm of snow-flakes, bringing up the rear, on a journey of a thousand miles, many hundreds of which are threaded by a bridle-way through a wilderness. The old folks at home are full of the event, and the distant settlers receive and dispense the intelligence to those still more remote.

At college he works like a Trojan. At the end of the session he returns to his forest-home; and his text-books, a pocket case of instruments, and a hundred medicines, in gold-leaf labelled jars and bottles, follow him. An office, of poles and cat and clay, awaits him in the corner of his father's yard. He is a marvel and a wonder to all that country, and jumps into an overwhelming practice! His people are happy in him, and he is happy in his people. Who would disturb these relations if he could? and

who could if he would? When that country is developed, with roads and wealth, and refinement, its medical men, to the manor born, will be like it, as their predecessors were, generations before, like it then.

Learning and genius are lost upon semi-barbarians, and recoil instinctively from their habitats. You may resolve as much as you please, after eloquent and interminable whereases, and in the future, as in the past, multiply reports that it ought not to be so, but the fact will still stare you in the face that it is so.

That the schools are all that their hopeful, faithful, and earnest teachers can make them, and that they accomplish all that is possible with the material entrusted to them, none ought to doubt; and that the country at large selects as good material as it possesses for the schools is equally indisputable. Nor should any believe that the youth selected for medical schools are, in respect of preparatory education, a whit inferior to those selected for the law or divinity.

The question returns to us—What can the Association now do, in its early manhood, honestly, towards redeeming implied pledges of its infancy? Much, if it have nerve or back-bone; nothing, if these be absent! The plan is simple, as all plans are that succeed. Logic and truth are simple, but without nerve the whole moral world is like an empty sack, utterly incapable of standing erect. The barrier to success has been removed by the abolition of school representation, as such, and reducing the whole body to "lay" members. It was to secure the success of the plan to be proposed, to elevate the standard of medical education, that the resolution was introduced at Nashville in 1857, to remove the schools from the Association.

In the arbitrary numbering of the objects for the promotion of which this body was created, that of number eight is declared to be "To take cognizance of the common interest of the Medical profession in every part of the United States." A very comprehensive power, assumed in the beginning, and never denied in all these years, will not be questioned now, when the moral frown of the Association would be fatal to whoever, or whatever, connected with medicine, should oppose the grand and benevolent objects that lie at its foundation. In taking cognizance of the common interest of the medical profession in every part of the United States, it must go back upon itself, and acknowledge its recreancy to the high objects of the fathers, who wore away their

lives in an unswerving devotion to it, not to exercise the sum total of its legal and moral force in securing a higher standard of medical education in this country than existed at the time of its inauguration.

Therefore, let it be solemnly resolved by this meeting, that it shall be regarded as derogatory to the character of any physician, in any part of the United States, to take under his care, as a student of medicine, any one who cannot exhibit evidence of having taken a degree in a regularly chartered college, or a certificate of qualifications necessary to become a student of medicine, from a board of examiners appointed for that purpose by the American Medical Association. This will do the work.

Territories and new States, in a country like ours, in a formative state, will provide themselves with medical helps in the mode we have described, which, existing outside of this body, and independent of it, will occasion it no concern whatever. Nor would the schools suffer pecuniary loss under this rule. When it was generally known, as it soon would be, young men desiring to enter the profession would earnestly devote themselves to the duties of preparation, nor relax their efforts till possessed of the degree or the certificate.

Again, many educated young men, under this rule, would turn their attention to medicine, whose votaries were to consist of their peers, who, under. the existing rule, would not risk its levelling influences. Let the doctorate imply something more than "two full courses of lectures, the last of which in this institution." Besides, it would give the college an ample excuse for not receiving every uneducated lazy dolt who desired to make a living under false pretences.

There is nothing really binding in the rule suggested. The only power in the matter is the great moral weight of the Association. It enacts nothing, but simply asserts what every member of it knows to be right. After a few years, such a certificate of the examining board, or evidence of a college degree, might be declared necessary in order to enable an applicant for membership in this body to secure admission; for surely it is the common privilege of all organizations to judge of the qualifications of their own members. Then will the certificate of membership here pass the holder anywhere as a gentleman and scholar.

It is precisely in this way that the Medical Department of the Army and Navy are purified. The adoption of this addition to

the Code of Ethics would furnish medical gentlemen an excuse for getting rid of applicants for office study whose preliminary education they know to be defective, and whose relations they would dislike to offend by saying so.

Neither would this rule exclude any one from being a doctor. In a vigorous republic there will always spring up men who, by genius and long self-training, literally hew their way to greatness, in all of the professions, while many more will pass through colleges, winning all their honors, to shrink into insignificance, and pass through the world unknowing and unknown. For the former heaven has made ample provisions, and stamped them as the nobility of nature, whom this body can neither depress nor elevate—nay, nor could an association of angels.

Under the old plan, as under the new, the schools must furnish the Association with delegates; but under the new, the delegate was passed upon and accepted before he was medically born. In this latter case the Association begins *de novo*, with the beginning. It is present at both ends of the line. In the former case it proposed to arrange the plumage of another party's chicken, to groom the steed of another. The proposition was arrogant, and excited opposition and clamor. The chicken was from the prairie and the steed from the desert, captured by the schools—were theirs; and they naturally threw about them the ægis of protection. Examining boards, after two courses of lectures, were boards born out of time, and their tender mercies to the callow brood were not to be trusted, and the preposterous suggestion was scouted. The new plan is a medical sandwich. The schools are a slice of ham between an upper and lower layer of Association bread. It must be clear to every thinking mind that the plan, while eminently just and proper, places medical education in the United States where it ought to be, with everything else pertaining to the profession, in the power of the American Medical Association. Medical education, *per se*, will take care of itself, the emulation of the schools being altogether sufficient for the maintenance of its great interest. It is the preliminary education of those who would enter the profession that must be looked to. It must be everywhere known that no medical college, nor any other contrivance short of the fiat of the Almighty, can make a physician out of an uneducated man—that medicine is the capsheaf of all knowledge, and the belief that prevails that it can exist in the absence of its legitimate supports

is only equalled by that which "materializes" the spirits of the departed before the resurrection.

God opened the Red Sea to the leader who was skilled in all the learning of the most learned people in existence. The greatest body of water is the lowest, and the foundation of the redemption of the world was confided to the lowly, still, when the glad tidings were to be carried to the learned nations, a profound logician and a philosopher received the appointment; and all, and therefore the greatest, of theological upheavals that have since convulsed the world, trace their origin to brains of the most elaborate culture. The god-like Clay, in his speech to his old neighbors, upon retiring from the Senate of the United States, among the obstructions in the path of his early life alludes feelingly to his "imperfect education." Drake, on whose triumphant theatre we are, and whose mighty spirit hovers about it like the aroma of the broken vase, would not go to Europe in his old age, being ashamed of his want of knowledge; and he whose great soul conceived and planned this organization, and whose eloquent pleadings have held it to its moorings, amid storm and sunshine, through a generation, in a heroic struggle to secure a higher educational plane for his beloved profession, declared that a defective early training had met and abashed him at every turn in his professional life.

While it is a duty we owe to a common brotherhood to sustain every member of it, yet those not born into it cannot complain of our action, they having nothing at stake in our profession, while its votaries leave them the whole world beside as scope and verge enough for the exercise of their genius.

The attempt to communicate to this body, *per se*, information upon a subject in regard to which one member knows as much as another, would be to manifest a pitiable degree of idiocy; but the circumstances not only justify, but demand, allusion here to whatever ought to reach the public at large, stamped with the authority of the Association, which could, in its own language, "promote the usefulness, honor, and interests of the profession, and enlighten and direct public opinion in regard to the duties, responsibilities, and requirements of medical men."

During the past year, a "scientist," whatever that means, having the supervision of a department of a widely-circulated political newspaper, published therein that the medical profession had not advanced a step in seventy years; and this cry, from many

quarters, so prolonged and persisting, has established a popular belief. "To enlighten and direct public opinion," it is proper to state that a member of this body, our late lamented lexicographer, among the chiefs of learning and industry in his generation, and alike an ornament to his profession and to human nature, "to meet," as he writes, "the progress of medical science," in the sixth and seventh editions of his Dictionary, added nine thousand terms and subjects, and in the eighth edition, twenty years ago, the same progress required four thousand more terms and subjects, and the edition of 1865, to the same end, required sixty-five pages of new terms and subjects. That a profession, stationary, or in an active retrograde movement from some fancied height, should require all these new terms and subjects during its decline, is simply ridiculous, and those among us who believe this, and who have aided in fixing this belief upon the public, have, for the time, but yielded to the flattering and seductive influences of a generous imagination.

Old politicians, being crowded out, very naturally conclude that the new ones are but imitating Phaeton's drive to destruction, and that the country, under their guidance, must inevitably go to pieces. Old men always have their lines cast in degenerate times, and the only consolation remaining to them is the reflection that their degenerate days will be the grand old time of patriotism, honor, and manhood, of their descendants. One needs no better authority than all the editions of Dunglison's Dictionary to assure him that, during this century, particularly, the progress of medicine, in all the countries of civilization, has been onward —right on—receiving not the slightest check from internal commotions nor outward pressure, but, like the tread of a mammoth, literally crushing out whatever accident or design placed upon its pathway.

That our own country has, during this period, contributed as much to this development as any other, no unprejudiced observer will dispute. During the last generation, especially, it has figured conspicuously on the frontier of medical progress; and that this Association has accelerated the movement is equally beyond controversy. As the iron-shod steed, speeding along the night-shrouded turnpike, illumines his way by the fire his own progress strikes from the resisting rocks, so this body, in doubt and darkness, often, when scorners smited and good friends hesi-

tated, caught fire from the very friction of opposing circumstances, and emerged, self-glorified, on its march to triumph.

Gentlemen: Western medicine, for a long time, established its Mecca at the Falls of the Ohio. Whatever the fashioners of taste may determine, the medical heart cannot go far astray in recalling the Titans that officiated at its altars. Many of them "sleep well after life's fitful fever," but the rock-girt and rock-floored river in the neighborhood of their ashes, as it throws its disturbed waters over the cascade, will chant their requiem while grass grows or water runs. One,[1] in a green old age, whose fame has filled the world, stands, like the statue of a demigod, poised on the apex of his monumental shaft, far above all surrounding things, pointing to an earlier day-star than greets the vision of ordinary mortality. Another,[2] happy in the memories of a well-spent life, the charming grace of whose cultured pen has left an imperishable record, lingers in the peaceful enjoyment of that subdued and enchanting twilight of life between sundown and the "deeper gloaming," so in harmony with the spirit of the good, and, having thrown his mantle on other shoulders, patiently awaits the "translation." One,[3] the Galen now of the great city of the Republic, garners the golden sheaves of a crop sown long ago, and thoroughly cultivated. Another,[4] the American Dupuytren, on the fringe of the sunny land of the orange and the magnolia, with the premonitions of a glorious sunset gathering about him, in faith and hope is also ready. We know that their example is not lost on those who have taken their places in the flourishing medical institutions of this noble city—a city whose munificence to medicine has entitled it for ever to the kindest memories of the profession.

[1] S. D. Gross.
[2] L. P. Yandell.
[3] Austin Flint.
[4] P. F. Eve.

MINUTES

OF THE

JUDICIAL COUNCIL.

MINUTES OF THE JUDICIAL COUNCIL.

THE Judicial Council met at the Galt House, Louisville, Ky., on Monday, May 3d, 1875.

The members present were Drs. BALDWIN, BARTLET, BENHAM, BRODIE, DAVIS, DEAN, DUNLAP, GALE, JOHNSTON, HOWARD, LILLY, TODD, BRONSON, and CATLIN.

On motion, Dr. N. S. DAVIS, of Illinois, was elected President of the Judicial Council, and Dr. S. N. BENHAM, of Pennsylvania, as Secretary of the same.

On motion of Dr. JOHNSTON, the charges relating to Dr. BARTHOLOW'S Experiments on a Patient, referred to the Council at the close of its session last year in Detroit, were laid on the table.

Dr. BRODIE moved that all papers placed in the hands of the Secretary of the Judicial Council be referred to the Secretary of the Association, in order to have the business come properly before the Judicial Council. Carried.

Dr. JOHNSON moved that our meetings be held at 8 o'clock A. M. Amended by Dr. BARTLETT to meet at 7 P. M., also when the business of the Council rendered it necessary.

Dr. BRODIE read the following:—

Resolved, As the sense of this Council, that no member shall divulge any of the proceedings or discussions to any one; and to do so will be considered a violation of honor. Carried.

On motion of Dr. BRODIE, Dr. J. J. DILLS was permitted to withdraw his credentials as a delegate from the Allen County Medical Society, of Indiana. Carried.

Dr. BRODIE moved that the proceedings in regard to the various delegates from the Louisville, Ky., societies be made the special order of business for 7 o'clock P. M. to-morrow, May 5.

Dr. DAVIS offered the following:—

Inasmuch as the charges against the admission of Drs. WOODWORTH, MYERS, and ROSENTHAL, as members of the Association, are now pending before the State Medical Society of Indiana,

Resolved, That they should be permitted to register at this meeting, and retain their standing until the final action of the State Society. Carried.

Dr. BRODIE move that the same resolution that was adopted in reference to Drs. WOODWORTH, MYERS, and ROSENTHAL, be also adopted in reference to Drs. BECK and GREGG, thus referring the whole matter to the State Medical Society of Indiana. Carried.

In reference to the delegates from the Marion County Medical Society, of Indiana, the following *Resolution* was adopted:—

Inasmuch as the Marion County Medical Society of Indiana was so recently organized as to be unable to obtain a status in the State Medical Society, therefore,

Resolved, That the whole matter be referred to the State Medical Society.

On motion, the credentials of Dr. W. O. SWEENEY, of the Kentucky State Medical Society, were referred to a special committee of one, for investigation, Dr. GALE being appointed by the Chair for that purpose. After due investigation, it was found that the Kentucky State Medical Society had its full quota of delegates, and for that reason alone Dr. W. O. SWEENEY could not be permitted to register.

In reference to the admission of the delegates from the College of Physicians and Surgeons of Louisville, Ky., Dr. DAVIS offered the following:—

Resolved, That the list of delegates appointed by the society known as the College of Physicians and Surgeons, of Louisville, Ky., consisting of Drs. TURNER ANDERSON, WM. BAILEY, D. W. YANDELL, LEWIS ROGERS, and J. W. HOLLAND, are the lawful and proper delegates from that society; and that the Committee of Arrangements should correct the registry of members for this meeting of the Association in conformity thereto. This was passed by the required vote of two-thirds of the members of the Council present.

A motion to reconsider the above, having been made, was lost.

Dr. DEAN offered the following:—

Resolved, That the action of the Committee of Arrangements in declining to receive and register the names of all the delegates appointed by the Society known as the Louisville Academy of Medicine, is approved as correct, simply because it is believed that the Association had already received from the State Medical Society of Kentucky, and the local societies in Louisville having a

prior active existence, the full number of delegates to which the profession of Louisville are entitled, under the present Constitution of this Association. Adopted.

Dr. BENHAM offered the following resolution: That all papers, charges, etc., presented to the Judicial Council by members of the American Medical Association, be retained by the secretary of the Council, provided that copies of such papers, charges, etc., may be made in case the members whose names are involved should require the same. Adopted.

The following resolution in reference to the difficulties existing between the Arkansas State Medical Society and the local societies was read, fully discussed, and finally adopted.

Inasmuch as the Arkansas State Medical Society has been regularly organized as a State Society, adopted the Code of Ethics of the American Medical Association, and has been represented by delegates in this Association; and as the charges now brought against said Society relate to alleged unfairness and irregularities in the transaction of its business, which do not involve a violation of the Code of Ethics, therefore,

Resolved, That the delegates of said State Medical Society should be admitted by proper registration at this meeting of the Association. Carried.

Resolved, That, inasmuch as, from the evidence before us, the delegates from the county societies of Arkansas are still in good standing in the State Society, they, therefore, be admitted as delegates to this Association. Carried.

On motion the Judicial Council adjourned.

S. N. BENHAM, M.D.,
Secretary.

MINUTES OF THE SECTION

ON

PRACTICAL MEDICINE, MATERIA MEDICA, AND PHYSIOLOGY.

MINUTES OF THE SECTION

ON

PRACTICAL MEDICINE, MATERIA MEDICA, AND PHYSIOLOGY.

TUESDAY, 3 P. M., May 4.

SECTION called to order at 3 P. M., by its President, Dr. AUSTIN FLINT, of New York.

Dr. N. S. DAVIS, Chairman of a special committee, presented and read a report upon *The Necessity for Coincident Clinical and Meteorological Observations and Records, in the Study of Etiology, and on the Influence of Atmospheric Conditions in the Development of the Bowel Affections of Children.*

Dr. H. C. WOOD, of Pennsylvania, remarked that he supposed the action of excessive heat in the production of serous fluxes, especially from the abdominal organs, is with physicians generally a familiar fact. He had, however, been led to the conclusion that these serous fluxes are the results of impressions made upon the nervous system, that they are of nervous origin, and are dependent upon paralytic affections of the vessels, giving rise to various changes, and probably also to an influence upon the trophic nerves of the parts. He referred to the fact that Dr. Weir Mitchell, of Philadelphia, had had an exceedingly rare opportunity to study the effects of atmospheric changes in the production of neuralgia, and that the results of his observations had been substantially negative. It is probable that many gentlemen have seen cases of neuralgia in which there has been apparently a close connection between the state of the weather and the presence of the neuralgic pain. A late professor at West Point received a gunshot wound in the late war, from which he suffered severe neuralgic pains, and there was a seeming relation between the pain and certain atmospheric conditions, and upon this point he has made accurate observations and furnished interesting charts upon which

are marked pain curves, together with meteorological observations, such as relate to the medium, maximum, and minimum amount of ozone in the air, the variations of the compass, the degree of humidity of the atmosphere, the direction and force of the wind, etc.; and, to the great astonishment of the observer, when all these items were gathered, there was found to be no relation between the pain waves and the meteorological changes noted, in other words, the result of the work was comparatively negative. We all know, however, that heat is a direct provocative of disease. It acts directly upon the nervous system, and in that way produces its effects, but there is no evidence for the speculations with regard to the production of the various diseases by an excessive or too small amount of ozone in the air, or by a meteorological condition of the atmosphere. Of course it is an excellent field of inquiry, and can only be properly pursued by those who are skilled in the use of proper instruments for making meteorological observations.

Dr. DAVIS remarked that we have a great deal of speculation concerning the causes of diseases, and that it is very much as it is with the action of many of our articles of the materia medica. We have thousands of articles in the materia medica about which almost all we know is that they are authorized to be used for such and such purposes, but when asked to explain their action, it is a difficult thing to get at. So it is with much of our knowledge with reference to the causation of disease. Now with reference to the item which has been mentioned, attacks of bowel complaint in children. One idea is that excessive heat produces them; another is that they are dependent upon teething, and there are probably thousands of children who perish every season because of this opinion. Nothing is to be done, it is reasoned, while the teeth are growing, etc., but then comes the fact that in the first consecutive steady warm weather these affections begin to develop rapidly, teeth or no teeth, and the question is, why should the teeth have any more effect at that time, if they happen to be coming, than in general? Then again, if it is simply high temperature, heat alone that gives rise to the disease, it is a question whether it does so by acting upon the nervous system, or whether it is heat acting upon the actual affinity which one atom has for another, disturbing the relation of one atom with another; for we know that in proportion as we have heat added to organized or dead matter there is a separation of the atoms one from

another. He was not sure that heat operates solely through the nervous system, but was of the opinion that it will be found to operate upon each and every atom which goes to make up the nerve molecule, but it undoubtedly affects nerve action because these atoms are a part of the organization. If the effects, however, are dependent upon the degree of heat, then when the thermometer indicates a high degree of temperature we should expect to have the effect, but his studies had led him to the conclusion that such is not the fact. In no instance within the last fifteen years has he known a consecutive high temperature night and day without having an aggravation of this class of diseases. When one or two days only are expired it will seldom be seen, but five or six consecutive days characterized by high temperature will as inevitably be attended by certain results as any other well-established law of nature.

What we wish to get at now is a basis upon which to form some conclusions. He would not now attempt to speculate with regard to the cause, or how it operates, whether it is heat directly, or whether it is conditions of heat modified by certain other elements, because he had not the data upon which to form a judgment. But it seemed to him that the time had come inasmuch as the government has got, and is getting more and more of trained men to make scientific observations which are specific, that we may in this Association make the necessary clinical means, so as to obtain finally observations which will clear away much of the rubbish with which we are now surrounded, and substitute considerable of scientific and specific deductions.

Dr. WOODWORTH, of Indiana, remarked that it is well known, as Dr. Wood has just said, that serous fluxes are more prevalent during the hot seasons of the year, and it is especially true of cholera infantum, but a reason for not regarding heat, *per se*, as a cause of it, is that it is a disease that does not prevail except in large towns to any great extent, and so far as he was acquainted, the disease does not prevail to any great extent, except in the United States. The prevalence of cholera infantum in the country is comparatively rare, and is almost exclusively confined to large towns and cities. There is no doubt but that children are subject to diarrhœa, during hot weather, in the country, as well as in the cities, but not proper cholera infantum. May it not be that there is something else besides heat, *per se*, that produces it? May there not be some vitiated state of the atmosphere, which is a greater

cause of disease than heat? He had no belief in the idea that heat, *per se*, is injurious or is the cause of disease generally. A far more common cause of disease is cold, and we know that that is an exciting cause of inflammatory diseases; and a very sudden change from hot to colder weather is a fruitful cause of disease. In 1849, when the cholera prevailed in the towns in which he visited, there was always an outbreak when there was a lowering of temperature accompanied with an east or northeasterly wind. So in 1852 and '54 the same thing was observed. It is a common expression that a changeable climate is conducive to disease. It is often said that the climate of certain localities is so changeable that it is bad, etc. He had read in one of Dr. Johnson's works written many years ago, that, instead of this being a cause of disease, it was the real reason why the climate of England was so much more healthy than that of Italy. He was of the opinion, however, that there must be some other cause for this disease especially, besides that of heat.

Dr. ROBERTS BARTHOLOW, of Ohio, commended the spirit of the resolutions, and was of the opinion that if the plan proposed can be faithfully carried out, there will be accumulated an immense body of facts, which will be of great service not only scientifically but clinically. He then referred to the Pennsylvania Hospital Reports, in which may be found a paper upon barometric pressure in relation to mortality after surgical operations. It was shown in that paper that when the barometer is falling it is unsafe to undertake an operation. About the same time Dr. Richardson, of England, undertook a series of investigations in the same direction, and arrived at identically the same conclusions, and that the barometric registrations were to be consulted when an important surgical operation was to be performed, and the operation was to be avoided when the barometer is falling. Mr. Spencer Wells was about to perform the operation of ovariotomy, and, as the barometer was descending rapidly, Dr. Richardson addressed a note to Mr. Wells stating that the operation if performed at that time would probably prove fatal. Mr. Wells, however, regarded it as a whim of a scientific investigator, and went on and performed this operation, and the result was unsuccessful as predicted. He then addressed a note to Dr. Richardson for the purpose of ascertaining how he had arrived at the conclusion he had given, and he replied that the conclusion was based upon the rapid descent of the mercury in the barometer.

Dr. W. S. EDGAR, of Missouri, remarked that, as confirmation

of the statements just listened to, in the chief cities of the central portion of the United States, St. Louis, Cincinnati, Chicago, the average temperature during the hot season is very high, perhaps, as high as 72° F., and that the water-fall in the same region is something over four inches. In the European cities, as London, Paris, Berlin, the average temperature during the same months is about 62° F., and the water-fall is less than two inches. He had looked this subject up thoroughly, extending over a period of ten consecutive years, and as regards this particular form of disease, it is not seen as we see it here in the United States. With reference to heat being the chief element in the production of the disease mentioned, especially the heat as experienced in cities, it is to be observed, that it is much greater in the night in the cities than in the country. It keeps up, and a continuous degree of heat is maintained, which exerts a prostrating influence especially upon the feeble, the aged, and the infant. In the country relief is obtained from the heat during the night. In the gulf cities also they do not have this disease except in a very slight degree. They also have cool breezes at night, and in most places there is such a relief from the heat of the day that at night a blanket is not uncomfortable; while in the cities of the central portion of the country, there is little or no relief during the night from the heat and the effect soon becomes intensely prostrating. From this continuous heat (and there is a large degree of moisture with it) the infant is especially prostrated.

Now we can do something with the facts we already have, and they are important and suggestive with regard to the nature of this and kindred diseases. They convince us that heat and moisture are the two factors, because it is not until we have moisture added that we have this particular form of disease, and although heat may be the principal factor, moisture does very much in assisting its influence. What, therefore, is suggested in way of treatment but to remove the child as far as possible from the intense heat, from the tenement-house which becomes so intensely hot during the summer months, out and where the child can obtain the influence of purer air and less degree of heat? With reference to the nervous system being prostrated by the disease, it is perhaps unquestionable, and therefore our treatment should be directed with this fact in view, and avoid all depressing treatment, such as the administration of mercurials, etc. Our treatment should be such as will sustain the system until the nerves can gather force sufficient to keep the

machinery in motion; hence the child should be kept cool, tendency to vomiting arrested, and also action from the bowels.

Dr. E. S. GAILLARD, of Kentucky, remarked, that the action contemplated by the resolutions was for the purpose of obtaining coincident meteorological phenomena rather than specific phenomena, and he was of the opinion that, perhaps, it would be well for the gentlemen to give their testimony. Inasmuch as the records with regard to specific are worthless, as showing any of the phenomena of disease, it is proposed to reach this result by showing the fact of coincident phenomena. He was satisfied that this is the only true plan.

He was able to testify, that, so far as absolute heat is concerned, there must be a singular error with regard to its effect in the production of summer diseases. In times past he practised medicine in Florida, and there, where we have summer diseases always from May to October, we had nothing like a tropical heat, for the mercury seldom rose above 85° F. The nights were always cool, heavy dews occurred, and almost always upon that peninsular portion a blanket at night was not uncomfortable. Yet there was more of this disease, cholera infantum, upon the peninsula than perhaps in any other place in the United States. It seems to be a widespread error that heat is essential to the production of summer diseases.

On the contrary, if we go to the extreme northern latitudes, we have, according to the testimony of Dr. Hayes in the report upon his exploring expedition, the fact that when the heat was exceedingly great during the day along the coast of Greenland, the crew were entirely free from attacks of the ordinary summer bowel troubles. We see from these facts, that in Florida these diseases prevail extensively without a high degree of average temperature, while in Greenland with the most intense heat there was nothing seen of the disease whatever. There seems, therefore, to be something more than one single factor present in the production of these diseases, and it is for the obtaining of coincident factors that Dr. Davis has introduced his resolutions.

It was at one time thought with regard to cholera, diphtheria, catarrh, and some other troubles, that where they prevailed ozone had reached its maximum degree in the atmosphere, but subsequent experience has shown that it requires something more than this to develop these diseases and that other factors must be taken into consideration. The ozone factor has led to erroneous conclusions,

and, perhaps, the factor of heat is leading in the same direction. There is but one way to obtain positive knowledge with regard to the etiology of certain diseases, and that is to take coincident clinical and meteorological phenomena and compare them, and he hoped the Association and the Section upon Practical Medicine would sustain the effort made in that direction.

Dr. H. C. WOOD, of Pennsylvania, remarked that it might possibly seem to the gentlemen that he did not appreciate the necessity of such observations as the one contemplated in the resolutions of Dr. Davis. That was not correct, for he did fully appreciate their value and importance and favored their operation. With regard to the action of heat; it is not the heat of the atmosphere outside of the body which influences the tissues, but the temperature inside of the body. A man may survive in a dry atmosphere which has a temperature of 150° F., while in an atmosphere which has a temperature of 99° even, if moist, he might be overcome. This can be proved by any one who will take the Turkish and Russian baths. In the Turkish bath a man may withstand a temperature even as high as 180° F., whereas in a Russian bath a temperature of 105° F., certainly 110° F., becomes exceedingly oppressive, simply because in the Russian bath there is no possibility of evaporation taking place from the surface of the body so as to cool it, and the heat accumulates within.

Again, with reference to heat and cold, they are not different. There is no such thing as cold. Cold is simply the withdrawal of caloric. The body is pitched upon a certain plane of caloric, and it makes but little difference whether it be depressed below this plane or lifted above; in either case disease may be developed. When a man is directly exposed to a constant high temperature he may get sunstroke; or, again, if exposed to a persistent high temperature he may get granular degeneration of the muscles and important internal organs, and he dies, and the death is attributed to the disease, when, perhaps, it is due simply to the effect of such long-continued high temperature upon the internal organs. We have in the first case a sudden action of heat which knocks the man down, causes paralysis of the brain, precisely the same as would a blow from a hammer.

We have a third form of high temperature which he conceived to relate more especially to the production of such diseases as cholera infantum. If we have an infant exposed to the deleterious influence of tenement houses in our large cities, it is always ex-

posed to the influence of poisoned air, and the patient is incapable of withstanding its subtle influence. That child is now exposed to long-continued heat, and, perhaps for the first week, it has no noticeable action upon the body, but the second week, it may be, the nerves begin to weaken, and before the third, there may be developed cholera infantum. It may occur even sooner than this, and it occurs because the nerves are not able to withstand the influence of heat supplementing that of a poisoned atmosphere.

Again, if the patient has an exhausted nervous system, and the temperature suddenly falls, the nervous system is no longer able to withstand the sudden fall.

If we take an animal with an elevated temperature, and plunge him into cold water and keep him there until the temperature is reduced, and then take him out, it will be found that the temperature will fall still lower than it was when the animal was first removed from the water. It is in this manner that a sudden falling in temperature may cause cholera infantum. There is probably a chief cause, which is passive until the last influence begins to be felt, which is probably heat, and when it comes it is like the last straw which breaks the camel's back.

Dr. EDGAR explained that he corresponded with Dr. Stone, of New Orleans, in regard to the prevalence of summer diseases in that region, and he had replied that in New Orleans they had but little of the disease known as cholera infantum.

Dr. W. ULRICH, of Pennsylvania, arose to differ with what has been said as to the effect of heat; as to its exerting the last influence upon this disease. His impression was that heat exerts the first influence. There is, however, another influence which we all have seemed to lose sight of, and that is the influence of light. All will probably agree that cholera infantum cannot be treated successfully as long as the rays of the sun are always in the room. Improper food, and even nursing, also have a powerful influence in the production of the disease, and should enter largely into the study of the causes of this disease.

Heat is the first cause, and then all these other influences come in as secondary to it. These are simply suggestions thrown out for the consideration of the members present.

Dr. J. B. JOHNSON, of Missouri, remarked that he did not regard heat as the prime cause of cholera infantum, and he regarded the health of the mother and the tendency of the child as having more to do, perhaps, with the development of the disease, than any other

cause which can be assigned. He was of the opinion that a great majority of these cases were dependent upon the presence of a tubercular diathesis.

The report was accepted and referred to the Committee of Publication. The resolutions appended were also adopted by the Section.

1st. *Resolved*, That the thanks of the American Medical Association are hereby tendered to Gen'l Myer, Superintendent of the Signal Service Bureau, for the promptness with which he is preparing to add observations concerning the electric and ozonic conditions of the atmosphere, to those heretofore made, at the several signal stations, and for the readiness he manifests to permit the records in his department to be used for the advancement of medical as well as general science.

2d. *Resolved*, That the chairman of this Section of the Association be requested to renew the appointment of a special committee of three, whose duty it shall be to promote diligently the work indicated in the foregoing report, and report progress at the next meeting of the Association.

The chair appointed the same committee as before, Dr. N. S. Davis, Chairman.

A paper was then read by Dr. E. H. CLARK, of Massachusetts, on *Doses, their Physiological and Therapeutical Import.*

Dr. J. B. JOHNSON, of Missouri, remarked that with reference to the manner of administering medicine, he is satisfied there has been a fault in his practice. Where he had not found the immediate results to follow which were desired, the remedy has been abandoned, whereas, if it had been persevered in, perhaps different results would have been obtained. It seemed to him that it is a difficult matter always to determine the dose of a remedy to be given. He did not think that any author could give the dose of many medicines, because diseases are so modified by constitutional peculiarities, and by climate, that we are obliged to give a very wide margin. When he first came to the West with his ideas derived from his teacher, whom he venerated as one of the noblest men in the profession, Dr. J. Bigelow, he soon found that these ideas were to be modified in a most marked manner. Dr. Bigelow had stated that when quinine was given in large doses, it would probably act as an irritant to the stomach, and was apt to produce a congestion of the brain, and that three grain doses were considered as large doses. When, therefore, he found practitioners giving ten and fifteen grain doses it was entirely beyond his com-

prehension. He further referred to the statement of Dr. Cartwright, who said that he had given as high as forty-five grains at a dose in the congestive form of malarial fever, and, perhaps, repeated the dose three times a day, and he had no doubt but that Dr. C. gave the doses indicated. For, knowing that, if the patient had a second chill, he would probably die, it was for the prevention of such an occurrence, and he usually succeeded.

He was well convinced that, with regard to the administration of some of the remedies Dr. Clark had alluded to and many others, he had made a great mistake in not persevering in their use, and had also failed by giving large doses and making the interval too long before the administration of the following dose. This had been the case with him not unfrequently in the administration of ergot for the control of hemorrhage, and he had failed to control it for the simple reason that he had abandoned this remedy much too soon, not having continued the doses in such a manner as to retain the continuous effect of the drug upon the system.

Dr. ULRICH, of Pennsylvania, remarked that he practised some eighteen years in the valley of the Mississippi, and had the pleasure of Dr. Cartwright's acquaintance, and he had known of Dr. C.'s administering quinine in forty and forty-five grain doses, and in 1853, in the treatment of yellow fever, his administration of large doses of quinine became quite fashionable. Whether the treatment was original with Dr. Cartwright or not, he was not aware, but it had the approval of as good a man as Dr. Stone, of New Orleans, and also other eminent medical men. In 1855, when yellow fever again appeared, large doses of quinine were again in vogue, but were very soon rejected, and now it need hardly be said that we seldom resort to the use of quinine at all in the treatment of yellow fever. In the treatment of pernicious congestive fever, when he had given large doses, he had not realized any absolute advantage from so doing. When the physician is called in to see a case of pernicious congestive fever in the congestive stage, he will find no benefit from administering quinine then. He must rely upon other means to relieve the paroxysm, but when the patient has once got through the paroxysm, there is no advantage in large doses; for, as a rule, he has ample time to affect the system and thoroughly cinchonize the patient with five or ten grain doses before the recurrence of the paroxysm.

The paper to which we have just listened is just such a paper as we all need. But little attention is paid, by the profession in

general, to doses in medicine. It is not uncommon to find physicians disagreeing with regard to the management of doses, but this should not be. It is not a difficult thing to determine the best effect that can be obtained by giving medicines in a certain manner and with reference to certain periods of time. We give medicines as a rule, however, predicated too much upon experience as given by authors.

Dr. CLARK remarked, lest the Section be led into a misapprehension by the remark of Dr. Johnson, that it was not simply the continuance of doses which he referred to, but the continued presence in the blood of the article which is being administered. A medicine may be given continuously and yet be administered only three times a day, but that is very different from keeping up a steady ratio between absorption and elimination, so that before the article is eliminated, the influence of another dose is felt. A very different effect is produced by a drug when given in this manner than when the blood is not charged with it.

Dr. A. C. MCLAUGHLIN, of Ohio, remarked that perhaps the United States Dispensatory is unreliable with regard to the size of the dose of medicine to be given. He was of the opinion that medicine in general is given in too large doses. The use of quinine in large doses is absurd in any case, for experiment will teach anybody that small doses will do just as well. His experience in the use of morphia had been the same; and he could accomplish all he desired with the article, by adding a half grain to part of a teacupful of water, and then giving a teaspoonful every fifteen or twenty minutes. The same was true with regard to the use of cimicifuga and other remedies.

Dr. J. K. BARTLETT, of Wisconsin, remarked that his experience had taught him very much the same thing as Dr. Johnson's had taught him. He had come to the conclusion that Dr. Clark is correct in the position he has taken, and that the administration of medicines continuously is the proper manner for obtaining the best therapeutical effects. For instance, if he wishes to control arterial excitement, he had found that it could be much better done by administering small doses, and repeating them often, than by giving larger ones at longer intervals. The same may be said with regard to the use of ergot for the control of hemorrhage.

Dr. WOODWORTH, of Indiana, inquired of Dr. Clark whether there was not a difference between the continuance of organic and inorganic medicines? For instance, it has been said mercury re

mains in the system for years, whereas organic substances may pass out of the system in a very short time.

Dr. CLARK replied that there was no doubt upon that point; and that there is a difference. But the point referred to in his paper rests upon *absorption* and *elimination*. Mercury has been detected in the system fifteen years after administration, consequently it can be reasonably inferred that such remedies do not require to be administered so frequently as others to maintain a continuous effect. He was well aware that if the law which he had announced is correct, it will necessitate a much larger amount of physiological knowledge upon the part of practitioners than they in general at present possess; for we must possess a knowledge of the time it requires for physiological absorption and elimination of remedies when administered in single doses.

Dr. J. R. BRONSON, of Massachusetts, inquired of Dr. McLaughlin whether he would apply his method of administering morphia in a case of severe pain, such as met with in colic, or peritonitis? He had supposed it was a point of importance to relieve pain, as soon as possible, consistent with safety; and that it hardly would seem that $\frac{1}{8}\frac{1}{4}$th of a grain of morphia would relieve pain as soon as $\frac{1}{4}$th of a grain. The proposition, it seems to him, was pernicious in this respect; that it does not give the materia medica the credit it deserves.

Dr. MCLAUGHLIN replied that he would not give morphine at all in peritonitis, and perhaps not in colic, but nux vomica instead. He gives it much oftener in these cases than he does morphine.

Dr. Clark's paper was then referred to the Publishing Committee, and the Section adjourned to meet at 3 P. M. Wednesday.

WEDNESDAY, May 5.

Section called to order by the President at 3 P. M.

Dr. MOREAU MORRIS, of New York, read a paper upon *Biometry and its Relation to Practical Medicine*. It was by vote referred to the Committee of Publication.

Dr. BARTHOLOW, of Ohio, presented and read a paper upon *Exophthalmic Goitre and its Treatment*.

Dr. L. D. BULKLEY, of New York, remarked that he had listened to the paper with much interest, particularly as he had only recently observed other neurotic phenomena closely akin to those mentioned, but which he had not seen mentioned by any observer.

In a somewhat recent case of well-marked exophthalmic goitre

which had fallen under his observation, one marked feature was the presence of an urticaria accompanied with a large amount of erythema; it was an erythema urticarium. This is an important point, especially as illustrating that branch of dermatology which studies the relation which exists between the nervous system and diseases of the skin. These two skin diseases have been placed among the neuroses. In the same patient there was also pigment discoloration upon the face and hands.

Dr. M. H. HENRY, of New York, referred to the same case mentioned by Dr. Bulkley, and stated that, after being under the care of eye doctors, nervous doctors, and skin doctors for a great length of time and without benefit, she finally came under his care. Looking upon the disease as one of nervous origin, he had placed the patient upon bromide of quinine and phosphorus, and the patient at once began to improve, and now is very well indeed. The case was mentioned to show that phosphorus is beneficial in the treatment of affections of the nervous system.

Dr. J. A. OCTERLONY, of Kentucky, remarked that within a few years past he had had several of these cases of exophthalmic goitre to treat, and as he had listened to the paper he had been struck with the absence of some symptoms which he had noticed in his cases. One of these symptoms was change in the color of the hair, but there was no change in the pigmentation of the skin. The hair became very light after having been of a dark brown. Another symptom was very great emaciation and tendency to diarrhœa. With regard to the name he desired to express some dissatisfaction with Dr. Bartholow for finding so much fault with the term exophthalmic goitre. It is well known that some of the symptoms may be absent, but at the same time there is no doubt but that the peculiar grouping of the three symptoms referred to constitute the essential elements of the disease. It seemed that the term exophthalmic goitre expresses very concisely, very pointedly the cardinal fact of the disease, consequently is far superior to some names which have been given it by continental observers.

Dr. A. T. KEYT, of Ohio, drew attention to the question of cardiac murmurs in this disease, and if present are they organic or functional, and where located?

Dr. BARTHOLOW replied that there may be murmurs present, and when present, they are of the same kind met with in anæmia. It is perfectly certain that many cases are complicated with cardiac lesions, but these are not essential to the disease.

Dr. H. D. DIDAMA, of New York, remarked that the Section should not be debarred from the pleasure of listening to remarks from the Chairman, simply by the fact that he is the presiding officer, and regarded it as unfair to the Section and to the Chairman if he was not a participant in the discussion.

Dr. A. FLINT, of New York, the Chairman, replied that he willingly contributed to the discussion, and was ready to answer any questions which would impart any knowledge to the members of the Section upon this subject. With regard to the question last propounded, namely, the existence of cardiac murmurs, he thought he was correct in the statement that in all cases of the disease which he had seen, cardiac murmurs had been present. In some cases the murmurs have been dependent upon coexisting cardiac lesions, which may coexist with this affection, but these are not essential to it. When no cardiac lesions have been present, the murmurs have been anæmic, and are to be explained in the same manner as anæmic murmurs. He further remarked that he had been interested in the paper, particularly with regard to treatment of this disease. He was of the opinion that he had seen beneficial effects from the long-continued use of aconite given in small doses, just sufficient to keep up a moderate and constant action of the drug upon the heart. It is a disease which resists medication, and he had seen several cases in which this remedy had been tolerated for a long time. He also mentioned a case in which there was a close approximation to recovery.

Dr. KEYT inquired whether there were mitral murmurs present in any of Dr. Flint's cases?

Dr. FLINT answered that there were none, except when mitral lesions were present; and that may give rise to discussion as to whether we have mitral murmur without mitral lesion. The murmurs in general met with in this disease are aortic and pulmonary direct.

Dr. DAVIS, of Illinois, remarked that he had been more interested in learning what he could of the essential pathology of these cases and of the treatment than anything else, and he had listened with attention to the paper, with the hope of catching something upon these two points. Not very many of these cases have fallen under his care, but he would mention the last two. One of these had been treated with electricity, how judiciously he was not aware, but had been treated for a considerable length of time, as well as subjected to considerable other treatment. This patient presented

symptoms such as left no doubt with regard to the nature of the disease, and was ultimately very decidedly improved, if not entirely relieved, by a rather protracted treatment, consisting of careful regulation of the diet, insisting upon a moderate and carefully regulated exercise in the open air every day, and the steady internal use of the comp. syr. of the hypophosphites taken after each meal, and digitalis pushed, first sufficiently to produce a positive slowing of the pulse, and subsequently endeavoring to keep up an appreciable degree of influence without obtaining its accumulative effect. The remark with reference to the use of aconite had brought this case to his mind. The other case was not so fully recovered while under observation, and what finally became of the patient he did not know. The patient, however, was improved by a similar course of treatment as pursued in the other case, except that aconite was used instead of digitalis. His own views had been, without being at all satisfied with regard to the correctness of the conclusions, that we have in this disease both defective constituency of the blood and defective nutrition of the ganglionic centres of the sympathetic. The essential starting point involves both the nerves connected with the heart and arterial system, especially of the vessels of the neck and those reaching to the head, as well as a more or less general defect in the processes by which nutritive material is elaborated and appropriated in the system. It was upon this basis that the treatment in the cases mentioned was carried out. He had no doubt, if we have any correct idea of the pathological location from which this disease emanates, that we might use electricity, if skilfully used, and with propriety combined with a suitable medication. But he was of the opinion that if we simply take the general idea of debility and give tonics indiscriminately, we shall seldom reach favorable results. If we get benefit from the use of tonics, they should be selected with the aim to improve nutrition and not increase nerve excitability. There is a difference in our tonics; some will almost invariably increase the temperature and nerve excitability; while others in some way promote assimilation, increase strength, and yet seem to have the effect rather to diminish nerve sensibility and excitability. The latter class of tonics are the ones particularly to be selected for the treatment of these cases. If we use any other tonics, we must associate with them some sedative which will answer the purpose of keeping down the peculiar excitability which may be caused by our tonic, or it will not act favorably.

The paper was then, on motion of Dr. TONER, referred to the Committee of Publication.

The address of the President, Dr. FLINT, was also referred to the same committee.

Dr. OCTERLONY, of Kentucky, who had been appointed upon a special committee, presented and read his report on *Cystic Degeneration of the Kidneys.*

As the hour was late, it was referred to the Committee of Publication without discussion.

Section adjourned to 3 P. M. Thursday.

THURSDAY, May 6.

Section called to order by the President at 3 P. M.

A paper was presented and read upon *The Treatment of Acute Pneumonia,* by Dr. A. J. IRWIN, of Ohio.

In this paper Dr. Irwin attempted to show that, theoretically and practically, alcohol was the remedy for pneumonia.

Dr. W. ULRICH, of Pennsylvania, desired to ask the gentleman whether he would administer brandy in that form of pneumonia, such as in his own practice he had met with in the past few months, where there is a highly congested condition present in the early stages? Would the brandy be used under these circumstances or not?

Dr. IRWIN replied that in those conditions he would give the larger doses of brandy; the greater the congestion, the greater the doses of brandy, and the earlier will be the convalescence. At the same time we should remember to keep up constant fomentations of the chest, so that we maintain a constant state of perspiration.

Dr. JOS. EASTMAN, of Indiana, remarked, that it would seem—in establishing any mode of treatment of disease, especially in presenting a remedy so entirely specific as his friend claims alcohol to be—it would seem as though he should give some evidence, with regard to physical exploration of the chest, as to whether one or more lobes were involved, or one or both lungs were involved by the disease. We have had presented no such evidence, and have heard only such symptoms as regard the pulse, respiration, condition of skin, etc. The report which has been made seems almost too good to be true, that alcohol has such power over such a fatal disease; especially as, during the last winter, it has been character-

ized by such a great amount of congestion during the earlier stages.

Dr. DAVIS, of Illinois. Mr. Chairman, I do not rise to consume time upon this subject, at least not to any great extent, for I was not fortunate enough to be present at the commencement of the reading of the paper, consequently do not feel prepared to fully discuss it; from what I heard of the paper, however, it so struck me as to make it amenable to the suggestion last made. When we attempt to establish the value of treatment in any given form of disease, the first element, perhaps, to be established to lay the foundation, is to make out the actual extent of the disease, the actual stage of its progress, and to define it by all the more exact means within our reach; otherwise, there is so wide latitude in the mode of expression that we do not know what we are going to compare, nor how we are to judge. And also in reference to the philosophy by which the explanation of the action of alcohol is made to apply in these cases; it is assumed that the danger, when pneumonia is present, is mainly from the retained effete carbonic acid gas in the blood. Now, does not the same impediment which stands in the way of escape of the effete carbonic acid gas from the blood through the lungs, stand just as much in the way of ingress of the oxygen from without into the blood? It strikes me that in the particular form of pneumonia to which the gentleman referred—I infer from what I heard of the paper, that he was confining his remarks mainly to croupous pneumonia, in which the epithelium is involved by the inflammation—the inflammation attacks the air cells—but that is only one form of pneumonia. According to my understanding of the matter, here is an inflammation which, if we grant the premises that it is in the air cells, actually involves the very tissue through which the oxygen within the cells permeates to reach the blood just as much as the carbonic acid gas permeates it or through it to get to the exterior. And I have yet to learn that the alcohol taken into the system does not diminish the amount of oxygen absorbed or taken up, and so much in proportion it diminishes the excretion of carbonic acid gas. In the experiments which I have performed, I noted in almost every instance, where alcohol was taken, that it diminished the amount of excretion of the waste carbon—that there was no evidence ever of its having actually stopped, undoubtedly it retarded tissue metamorphosis, but so far from restraining any waste fully, it allowed the carbon to increase, so as to change the

relative color of the blood in the lips and face, and so that when the effect of the alcohol had passed off for a time, the excretion of the waste carbon came up to a higher ratio than before the experiment was begun, again showing that the patient was getting rid of what had accumulated in the blood. Hence, when alcohol is taken in health, if it tends to promote the accumulation of carbon in the blood, the danger is added in cases of pneumonia of adding carbon in excess, according to the gentleman's theory. I should be afraid, that, instead of retarding the metamorphosis of tissue in acute pneumonia, the remedy would be as bad as the disease in a good many cases. Now, Mr. Chairman, I do not know as I am justified in the expression, but I cannot help throwing out a suggestion, and that is, that, when one hundred and upwards of cases of an acute disease are treated without a single death occurring, there is something exceedingly suspicious about the diagnosis.

Dr. ———, of Illinois, remarked that the agitation of the value of alcohol as a therapeutical agent is perhaps scarcely less important than the agitation of the value of what may be called its antipode, bloodletting. It is a question that is not decided, by any means, as yet. There are, unquestionably, decided effects following the administration of alcohol, but its physiological action, for the most part, is yet in the dark. The suggestion of Dr. Davis strikes me with a great deal of force, and that is the statement that one hundred and forty-seven cases of pneumonia were treated successfully by the administration of one agent may reasonably excite doubt as to the correctness of diagnosis. Now, it has occurred to me, that if we regard alcohol as a food agent, to administer it during the progress of an inflammatory disease in its earlier stages is like adding fuel to the flame and keeping blankets upon the outside. The idea is, if alcohol is a food, that it is properly administered only in diseases of grave character where supporting treatment is required; but, when inflammatory disease of a character like that of acute pneumonia is present, it is not required until supporting treatment is demanded.

Dr. L. P. YANDELL, Sr., of Kentucky. It is not claimed by any one, I suppose, that alcohol is a food in the sense in which that term is generally used and understood, but that it acts as a food so far as protection of the system against oxidation, or furnishes material for oxidation, and so supports the system during the process of waste which is going on; for instance, in forms of a slow and protracted type. The most interesting fact in regard to alcohol is that

it has a powerful influence in reducing animal heat. It diminishes the elimination of carbonic acid, or the quantity of carbonic acid evolved is less after the imbibition of alcohol, and it is by this, conclusive that it reduces animal heat. The experiments of Anstie and others prove conclusively that it is an apyretic. But I do not think that any one in this country is likely to adopt alcohol as an antiphlogistic remedy, for the reason that we have so many other remedies which are superior to it. The statement with regard to the number of cases of pneumonia treated successfully by this agent is absolutely astounding. My experience in the treatment of pneumonia as seen under all systems—under the old-fashioned antiphlogistic system where we bled again and again, under the expectant treatment where food is insisted upon and stimulants quite likely—my experience has been that about one in six or seven cases proves fatal. And that any one in the world, by any possible plan of treatment, can obtain such success in the treatment of one hundred and forty-five consecutive cases, surpasses all my powers of belief. I am in doubt as to the value of alcohol at all in the treatment of pneumonia, for it is a disease which runs its course rapidly, and terminates either fatally or in resolution, as a rule, within eight or ten days, and alcohol does not seem to me to constitute a valuable remedial agent. I have seen not many cases of pneumonia in which alcohol seemed to be adapted. There are cases of fever in which alcohol is exceedingly valuable as a remedial agent, but my impression is that the profession acts wisely when it sets its face against the use of alcohol in the treatment of disease, especially of disease where it is to be kept up for a long time and where there is danger of forming that most terrible of appetites, an appetite for strong drink.

Dr. BARTLETT, Secretary, remarked that he had no doubt that the Section would be pleased to listen to remarks from our worthy Chairman upon this subject, and hoped the Section would not be denied that pleasure.

Dr. FLINT responded by saying that he would not take up the time of the Section by entering into an extended discussion of the question before it, but it seemed to him that the criticism, with regard to embracing in a paper of this character the grounds for the accuracy of diagnosis, is an important point. If a paper of this kind, presenting such surprising results, from any form of medication, were to be given to the world, certainly a great many would suspect that there was an error in diagnosis. It strikes me, there-

fore, that it is a fundamental matter that enough of physical signs as well as rational symptoms should be given to make it clear to the reader that there was no error in the diagnosis. I will not consume time in discussing the use of alcohol in the treatment of this disease, but I will venture to offer one criticism, which has not been touched upon in the remarks already made, and that is an important point in the train of reasoning pursued in the paper, namely, the mode of death. The author of the paper in a complimentary manner alluded to remarks of mine upon that point but in cases of pneumonia the mode of dying is not by asphyxia, but in general, death occurs by asthenia, in other words, the patients die from exhaustion. So, whatever benefit alcohol may have in these cases, is in the direction of preventing death by exhaustion or asthenia, and not by asphyxia. I will now venture to suggest that the paper be referred to the author for further elucidation and presentation of facts having an immediate bearing upon its contents.

Dr. IRWIN remarked as follows: In order, in the first place, to satisfy the members of the Section upon the point suggested with reference to the proportion of deaths and the symptoms of the cases brought forward, my explanation is simply this: The exact symptoms of a stage of the disease, so as to get at precisely what stage the lung is in, according to the theory I have brought forward, is not essential, inasmuch as the impediment in the respirating membrane is brought forward as the difficulty which is at the bottom of the trouble, and it does not matter as to the very exact stage of the disease present, so that that condition still exists. Furthermore, I very well understand that if I had brought before you detailed symptoms and physical signs of one hundred and forty-seven cases, there would have been produced a paper altogether too long to listen to. I have given the method of treatment simply in this brief form to bring it within the limit of the time, the twenty minutes, allotted for reading each paper. As far as the matter of symptoms is concerned, those of pneumonia are so well and so commonly understood, that I took it as superfluous to recite the symptoms of every case on hand. As to the remarks of Dr. Davis, he, having not been present at the commencement of the reading of the paper, failed to hear what I had to say upon the important matter to which he has referred. For instance, he said that the impediment to the respiratory act was necessary to exclude oxygen and prevent the escape of carbonic acid, and create a want of a sufficient supply of oxygen to meet the demand consequent upon destructive assimi-

lation. I am not at all surprised to find that the profession is altogether surprised with the results of the treatment. For I have suggested the treatment to a great many physicians and have not found a physician who dared to try it, and the invariable answer has been that they would not dare to try it. I have presented the matter to three different local medical societies, and the invariable reply was that they would not dare to try it. As to the correctness of diagnosis, of course we expect every physician to meet with probably that number of cases of acute pneumonia, within twelve years' time, and consequently probable mistakes in diagnosis would be scarcely presumable. But I should like to see the matter brought before the profession in such a manner as that they will be willing to risk a trial of this plan of treatment.

The paper was referred to the author for further investigations, etc.

A paper was then read by Dr. LOUIS ELSBERG, of New York, upon *The Bioplasson Doctrine.*

The paper was accompanied by diagrams of microscopic observations, and was listened to with much interest. It was referred to the Committee of Publication.

Paper presented and read by Dr. A. T. KEYT, of Ohio, on *A New Sphygmograph,* and the instrument exhibited. On motion of Dr. Davis, the thanks of the Section were tendered to Dr. Keyt, and he was requested to publish the paper in some medical journal as having been read before the Section.

A paper from Dr. STORER, of Massachusetts, and one from Dr. TURNBULL, of Pennsylvania, were referred by vote of the Section to a special committee for examination and disposition.

Dr. N. S. DAVIS, of Illinois, was appointed chairman of said committee.

Section adjourned *sine die.*

J. K. BARTLETT,
Secretary.

REPORT OF SUB-COMMITTEE OF SECTION ON PRACTICAL MEDICINE, MATERIA MEDICA, AND PHYSIOLOGY.

THE undersigned, to whom were referred the papers entitled, *European Winter Cures*, by HORATIO R. STORER, M.D., and *An Essay on the Use of the Tones of the Human Voice in Diagnosis of Diseases of the Ear, etc.*, by L. TURNBULL, M.D., respectfully reports that he has examined both papers carefully, and does not find in either of them such matter as would justify their reference to the Committee of Publication under the by-law of the Association directing the mode of disposing of papers in the Sections. The paper by Dr. STORER on *European Winter Cures* is well written, and contains much that would be interesting both to the profession and the public, if it were placed before them in some one of the more widely circulated professional or even literary magazines. And it is hoped the author will consent to have it take that direction.

The paper of Dr. TURNBULL *On the Use of the Tones of the Human Voice in Diagnosis of Diseases of the Ear*, is written in good style, and contains an account of some experiments of interest and value. Much the larger part of the paper, however, is occupied with an account of the progress of otology, and is made up of historical facts already fully accessible to the profession in recently published works. We, therefore, recommend that the paper be returned to the author, with the request that he separate that part of it relating to his own experimental investigations, and furnish it for publication either in the Transactions of the Association or in some leading medical periodical, as he may choose.[1]

Respectfully submitted,

N. S. DAVIS,
Sub-Committee.

[1 This was complied with by its publication in the Transactions of the Association for the Advancement of Science.]

ADDRESS IN PRACTICAL MEDICINE.

DR. AUSTIN FLINT, President of the Section of Practical Medicine, Materia Medica, and Physiology, read the following address:—

MEMBERS OF THE ASSOCIATION: During the past year there has been no lack of activity in physiological researches. To a considerable extent these have related to either the confirmation or interpretation of facts already ascertained; and, for the most part, so far as they have reference to new developments in knowledge, their importance is to be determined by further investigation. What I shall mention, therefore, as properly, at this time, coming within the scope of "advances and discoveries," will not require much space.

A French physiologist, Malassez, has devised a method for an accurate enumeration of the red and white corpuscles of the blood. The process is as follows: "The blood to be examined is diluted with 99 parts of a liquid composed of one volume of a solution of gum Arabic of a sp. gr. of 1020 with three volumes of a solution of equal parts of sulphate of soda and chloride of sodium, also of a sp. gr. of 1020. The mixture, containing one part of blood in one hundred, is introduced into a small thermometer tube with an elliptical bore, the sides of the tube being ground flat for convenience of microscopical examination. The capacity of the tube is to be calculated, by estimating the weight of a volume of mercury contained in a certain length. The tube is then filled with the diluted blood, and the number of corpuscles in a given length of the tube is counted by means of a microscope fitted with an eye-piece micrometer. In this way, the number of corpuscles in a given volume of blood can be readily estimated. In man the number in a cubic millimetre of blood (a millimetre = to about $\frac{1}{25}$ of an inch) is estimated at about four million."[1]

[1] Flint's Physiology, vol. i., 2d ed., 1875. For Malassez's article, entitled "*Nouvelle méthode de numeration des globules rouges et des globules blanc du sang*," vide *Archives de physiologie*, Paris, 1874, tome vi. p. 32 et seq.

It seems surprising, in view of its obvious importance, that a simple and exact method of enumerating the blood-corpuscles should be a novelty. The importance of it relates to both physiology and pathology. It is important, in the first place, to deduce from a sufficient number of observations the range of variation in the number of the red and white corpuscles which is compatible with health. In the second place, the enumeration of the corpuscles in different parts of the vascular system may lead to important conclusions. According to the observations of Malassez, the red corpuscles are about equally numerous throughout the arterial system, and the proportional number is greater in the blood of the veins than in the arteries. He has found the largest proportion in the splenic veins, and the smallest proportion in the hepatic veins, the inference, therefore, being that red corpuscles are generated in the spleen, and that there is more or less destruction of them in the liver. It may be that this plan of investigation, continued and extended (which is analogous to that by which Bernard made the discovery of the formation of sugar in the liver and its destruction in the lungs), will lead to the elucidation of the genesis of the blood-corpuscles, and to an increase of our knowledge respecting their functions. These results may be of much service in relation to pathology. In a more direct relation to the latter, the enumeration of the red corpuscles may be expected to give precision to our knowledge, on the one hand, of plethora or polyæmia, and, on the other hand, of anæmia. This is especially desirable, inasmuch as the degree of these morbid conditions, and even their existence, are not determinable with accuracy by the morbid phenomena to which they give rise. It may indeed be imagined that to count the number of red and white corpuscles in a certain quantity of blood, will be found to have a practical value in diagnosis comparable to the movement of heat by the thermometer.

An interesting problem relating to alcohol in the system seems to have been solved. It has been for some time a vexed question to what extent alcohol, when ingested, is eliminated, as such, from the body. Some have held the opinion that it passes into the blood, and is expelled through the emunctories unchanged; others have claimed that it is a food. The recent experiments of the late lamented Anstie, assisted by Dr. Dupré, appear to show conclusively that even when a considerable quantity of alcohol is ingested, the proportion excreted by the kidneys, lungs, skin, and

urine is extremely small; and a logical inference is that the greater part must be destroyed within the body.

Assuming that the disposal of ingested alcohol by elimination is no longer a question, it is desirable to know what becomes of it. This inquiry remains to be answered by further experimental researches. The inquiry is physiological so far as it relates to the ingestion of alcohol in an amount which is unattended by any morbid effects, either immediate or remote. Anstie reaches the conclusion that "600 grains of absolute alcohol can be disposed of daily within the organism of an adult male without any perceptible injurious effect upon the bodily functions." But, as it is needless to say, the inquiry has important pathological bearings; it touches the manifold morbid effects embraced under the name alcoholism. Moreover, the inquiry has therapeutical relations. Alcohol, at the present time, is largely employed in the treatment of diseases. The consideration of its pathological and therapeutical relations would, of course, not be pertinent in this connection. With respect to the latter, however, I will simply remark that the knowledge which many now possess, or hereafter acquire, respecting the value of alcohol in the treatment of disease, rests not on ascertained facts pertaining to its elimination, or to what becomes of it in the body; but on purely empirical evidence, in other words, on clinical experience. I will add another remark, namely, the value of alcohol, as a remedial agent, is to be considered independently of the subject of intemperance. Without the slightest wish to depreciate the importance of this subject in its physical, mental, and moral aspects, it is a subject not embraced within the scope of the scientific investigation of the therapeutic agency of alcohol. The truth of this statement is too plainly evident to need discussion, were the occasion appropriate; but, plain as it is, it seems sometimes to be lost sight of by physicians in their honest and praiseworthy zeal for the welfare of mankind.[1]

The physiological investigations which, during the past year, have excited most interest, relate to the existence of localization of motor centres in the convolutions of the brain. The original observations of Fritsch and Hitzig, in Germany, together with those of Ferrier, in Great Britain, and of Bartholow, in this country, were noticed in the report by Prof. Davis, at the last meeting

[1] For the experiments of Anstie and Dupré referred to, *vide* "The Practitioner," London, No. for July, 1874.

of the Association. Since that meeting, further contributions from Hitzig and Ferrier have appeared. Other observers have entered into this field of experimental study, and the results have given rise to much discussion. In our country, a series of well-planned and carefully conducted experiments have been performed by a committee appointed by the "New York Society of Neurology and Electrology," of which Prof. John C. Dalton was chairman, the result being a confirmation of the existence and localization of certain motor-centres as determined by Hitzig.[1] Some important observations have also been made by Dr. Putnam, of Boston.[2] The extent to which the cerebral convolutions may be found to be resolvable into distinct centres having special motor and sensory relations, cannot, of course, be conjectured. The subject claims continued experimental investigations in connection with the study of cases of disease. I pass it by with this brief notice, because the facts contributed during the past year, are, for the most part, important either as corroborating those previously ascertained, or as bearing on their interpretation. Moreover, the subject is brought to the attention of the profession by numerous articles in medical journals and other publications.

In materia medica there are three articles, recently introduced, which give promise of usefulness, namely, jaborandi, salicylic acid, and the benzoate of lithia.

The first of these remedies, jaborandi, is a Brazilian shrub, an infusion of the leaves being the preparation which has been used. The remedy appears to possess very remarkable power as a sudorific and a sialagogue. A very copious perspiration, speedily produced, continues for a couple of hours, attended with a decrease of the temperature of the body. The flow of saliva is proportionately large, a pint and a half having been collected in less than two hours. These effects seem to take place with great certainty. The remedy was brought to Paris by Dr. S. Continho, of Pernambuco. Experimental observations have been reported by M. Rabuteau and M. Gubler, of Paris, and by Sidney Ringer and Alfred Gould, in England.

The peculiar and powerful effects of salicylic acid as an antiferment and an antiseptic remedy, together with its constitution and

[1] For the Report of Dr. Dalton *vide* New York Medical Journal, No. for March, 1875.

[2] *Vide* Boston Medical and Surgical Journal, July 16, 1874.

the mode of its production, have been brought to the attention of the medical profession of this country in a paper by the eminent chemist and pharmaceutist, Squibb, read before the Medical Society of the State of New York, February 2d, 1875. The advantages claimed for this remedy, as set forth in this paper, are: 1st, that it is more powerful than other antiseptics in smaller quantities; 2d, that it has no caustic nor irritant effects upon the tissues; 3d, that it is effective in preventing processes of decomposition which are beyond the reach of other antiseptics or antiferments; 4th, it is odorless and tasteless, as well as harmless. A marked peculiarity is, that, while it is potential in the processes referable to living organisms, such as the fermentation by yeast and processes of putrefaction, it is equally effective in preventing chemical processes of decomposition; whereas other antiferments, such as carbolic acid, although they may arrest the vital fermentations, are powerless with the chemical processes. If these advantages are substantiated, their value is to be measured by the importance of arresting these vital and chemical processes in medical and surgical practice.

The benzoate of lithia "is a very soluble salt, and has other alleged advantages over other lithia salts in the treatment of urinary diseases, and gouty and rheumatic affections."[1]

With reference to advances in materia medica, it would be interesting and useful to review the experience of the past year in regard to articles introduced within the few preceding years, such as pepsin, guarana, nitrite of amyl, apomorphia, phosphide of zinc, the lacto-phosphates, monobromide of camphor, eucalyptus, oil of sandal-wood, Calabar bean, and the oleates. This would require a digest of all that is contained in medical literature in addition to these articles, and it would be desirable to add the testimony obtained by personal application to trustworthy clinical observers. I have not entered into this undertaking, in view of the labor involved and the space in this report which it would be necessary to devote to the subject. Should the undertaking appear to the Association of sufficient importance, I would suggest the appointment of a special committee to engage in it.

A reviewal of the medical literature of the past year furnishes nothing which claims to be an important discovery in the practice of medicine. Judging from the past, it is not in the order of Providence that we should be able, from year to year, to chronicle

[1] Quoted from letter of Dr. Squibb.

important discoveries in the management of diseases. The onward march of medicine is by steady progress rather than by rapid strides. What evidence is there of advancement during the past year? It is plain that the answer to this question must relate to principles or measures of practice of a date anterior to this period, since any novelty requires more than a single year to test its importance by experience. Hence, the evidence of advancement during the past year, is to be sought for in either the establishment or the extension of what was previously known, and not in the development of anything entirely new.

I have just cited the introduction into the materia medica of a new remedy to which are attributed certain advantages as an antiferment and an antiseptic. This suggests the etiological doctrine known as the "germ theory." With respect to certain special causes of disease, namely, the contagiums, and those external morbific agents which, under possible conditions, are reproduced and give rise to non-communicable endemic and epidemic diseases, the doctrine that they are living organisms has, of late years, commended itself more and more as probably true. The theory is, undoubtedly, more consistent than any other with known facts in etiology, and perhaps it is correct to say that the logical evidence in its behalf is sufficient to render its truth more than probable; but the demonstrative proof, in the minds of many, if not the majority, of medical thinkers, is in the future. Meanwhile, the theory has an influence on therapeutics. It serves to explain the *modus operandi* of certain remedies, the well-known efficacy of which rests on empirical evidence, *e. g.*, quinia in periodical fever, and mercury in syphilis. It has also led to the employment of remedies which are shown by experiments out of the body to be potential in preventing and arresting processes attributed to the action of vital organisms. Conclusive evidence derived from experience of the efficacy of remedies known to control fermentative and septic processes, would go far to substantiate the germ theory. It would be pleasant to refer to evidence of this kind, as denoting advancement in the practice of medicine during the past year; but it must be confessed that further observations are needed to warrant any positive conclusions.

It may be proper to mention, as evidence of advancement in the practice of medicine, progress in the recognition of a therapeutical object, in the treatment of febrile and inflammatory diseases, which, with the introduction of the thermometer, has, within the past few

years, been revived, namely, the reduction of a preternatural heat of the body. Regarding hyperpyrexia as a secondary cause giving rise to various morbid effects, and as a morbid element which may involve immediate danger to life, physicians are coming more and more to consider the importance of reducing the increased temperature. For the direct abstraction of heat, the potency of water, in different modes of application, seems fast regaining the favor which it formerly derived, for a brief period, from the researches of Currie; and internal remedies, such as quinia, digitalis, and the veratrum viride, are employed for an antipyretic effect. To what extent the fulfilment of this therapeutical object increases our ability to control disease, is to be determined by continued clinical experience.

Some experiments of transfusion with other than human blood have been reported within the past year. Professor Landois, of Greifswald, has studied by direct observation the effects upon the blood in different animals of the transfusion of blood taken from another species.[1] He injected into the veins of dogs, blood from the sheep, cat, guinea-pig, calf, pig, and pigeon, as well as the blood from man. He found that the "serum of the blood, either fresh or defibrinated, of many mammals dissolves the blood-corpuscles of other mammals." In his experiments this dissolving power was found to be greatest in the blood-serum of the dog, and the least in that of the rabbit. And, on the other hand, the blood-corpuscles in the dog resist longest the action of the serum from other animals; and those in the rabbit had the least resistance. Albumen and hæmoglobin were found in the urine shortly after the transfusion. The operation was sometimes followed by quickened respiration, dyspnœa, convulsions, and even death. From these experiments he is led to think that there is not much probability of the foreign blood-corpuscles taking on themselves the physiological functions of those belonging to the animal receiving the transfused blood, when the two species stand some distance apart in the zoological series, but he does not offer data on which to found a positive opinion with regard to very closely allied species. With reference to the bearing of these experiments on the transfusion of other than human blood in man, it seems desirable that they should be repeated and extended.

[1] Centralblatt, Dec. 1873; Med. Times and Gazette, May 30, 1874, and the Am. Journ. of Med. Sciences, Oct. 1874.

The experiment of transfusing into the human system lamb's blood has been repeated in a number of instances. An instance communicated to the Medical Society of London, by Dr. Theodore Williams, is especially interesting, from the fact that the person receiving the transfused blood was a physician, Dr. Redtel, of Köhen, affected with phthisis and ulceration of the larynx. One immediate effect in this case was dyspnœa, requiring discontinuance of the operation at the end of 95 seconds. A general rigor occurred soon afterward, with slight cyanosis, followed by reaction and profuse perspiration. On the second day the urine contained a trace of albumen, and five days afterward an eruption of urticaria appeared, with high fever, greatly prostrating the patient.[1]

Five cases are reported by Dr. Thurn, of Frankfort. Phthisis existed in four of these cases, the remaining case being one of great exhaustion from menorrhagia. The transfusion was followed by immediate effects analogous to those just named. After recovery from these effects, there appeared to be some improvement in the condition of the phthisical patients, and the patient with menorrhagia recovered rapidly.[2]

Dr. Hasse, of Nordhausen, has reported twelve cases, namely: five of phthisis, two of chlorosis, two of cachexia after severe illness, one of cachexia with caries of the vertebræ, one of carcinoma, and one of severe hemorrhage from placenta prævia. The last case recovered rapidly; the two cases of general cachexia recovered gradually, and the chlorotic patient very slowly. More or less improvement seemed to be a result in the other cases.[3]

So far as we may judge from these reported experiments, the transfusion of lamb's blood is followed by immediate effects which involve considerable perturbation, and are probably not altogether devoid of danger; and, as regards the ulterior result, making due allowance for the moral influence of such a measure on the mind of a patient, together with the anxiety on the part of the physician to discover improvement, considering, also, in certain of the cases, the probability of recovery, more or less rapid, irrespective of this method of treatment, we cannot, as it seems to me, without further facts, conclude this to be a demonstrated advancement in the practice of medicine. We are, however, warranted in the

[1] Lancet, Nov. 21, 1874, and Am. Journ. of Med. Sciences, Jan. 1875.

[2] Berliner Klinische Wochenschrift and Ibid.

[3] Tagesblatt der 46 bersammlung, Deutscher Naturforscher, Wiesbaden, 1873, and Am. Journ. of Med. Sciences, Oct. 1874.

conclusion that it is a therapeutical measure deserving of further experimental investigation. The points to be settled are, 1st. Will the transfusion of other than human blood answer the same ends as the latter? To settle this point it is desirable that the blood of different animals should be tried, and further experiments to show the effects of transfusing into different animals the blood of other species may afford important information. If any other than human blood be found to answer as well as the latter, there is an obvious advantage in the unlimited supply for transfusion. 2d. What importance belongs to the immediate effects; and can these be obviated by the mode of performing the operation, the amount of blood transfused, etc.? 3d. What is the inference to be drawn from a sufficiently large number of observations, with respect to the ulterior result in different diseases?

The successful treatment of gastric ulcer by restricting alimentation exclusively to nutritive enemas, has been exemplified by cases reported within the past year. Dr. Balthaza Foster, in a work entitled "Clinical Medicine, Lectures, and Essays," London, 1874, reports several cases in which complete rest of the stomach for a few days was speedily successful, all the symptoms of ulcer rapidly disappearing. A case is also reported by Dr. Theodore Williams.[1] The success of this mode of treatment is by no means a novelty; these cases only corroborate previous clinical experience. The evidence of advancement is derived, not from the fact of success, but from circumstances bearing on the means of securing effectually alimentation in the large intestine. Here is a matter pertaining to the practice of medicine, which has not hitherto received sufficient attention. The subject of rectal alimentation is of broader application than to the treatment of gastric ulcer. It applies to all cases in which an object of treatment is to secure for the stomach complete rest, and to all cases in which alimentation by the natural digestion of food is impracticable. The fact that digestion, granulation, and nutrition may be adequately maintained for an indefinite period when aliment is introduced alone by the rectum, is sufficiently established; hence arise these practical questions: what kinds of aliment are best suited to rectal alimentation? what are the proper modes of the preparation of aliment? and what circumstances connected with its administration are important to success?

[1] London Lancet, Oct. 24, 1874, and the Am. Journ. of Med. Sciences, Jan. 1875.

The articles of diet used in Foster's cases were unsalted beef-tea, and the yolk of egg with milk, given alternately. Beef-tea and eggs were given in the case reported by Williams. A German writer, Leube, has employed and extols a preparation which he calls Fleisch solution, consisting of lean finely chopped meat with pancreas from the pig or ox, the mixture rubbed together in a mortar and reduced to the consistency of thick soup.[1] Foster, in his essay, enforces the importance of giving from three to five enemas daily, 3 or 4 ounces only being given at one time, from 10 to 15 minims of laudanum being added to each injection, and as a preliminary measure a large simple enema having been employed in order to wash out completely the contents of the rectum. Pepsin may be added with advantage to the nutritive material. In the case reported by Williams, the patient gained ten pounds in weight under the treatment with nutritive injections, to which brandy was added, showing, to quote the reporter's language, "that we possess in the rectum an effective second stomach which, if it does not afford us the pleasures of digestion, spares us many of its pains."

It is much to be desired that a series of experiments on persons in health should be instituted with a view to determine the extent, as regards completeness and duration, to which the large intestine is capable of performing the functions of digestion and absorption, the preparations of diet best adapted to rectal alimentation, the quantity of nutriment to be given at a time, the number of injections daily, and other circumstances bearing practically on the subject. Here is an opportunity for any one whose zeal for the advancement of medical knowledge is sufficient to lead him to submit himself to a series of experiments which could hardly fail to be of signal service to medicine.

I have thus adduced some evidence of advancement in the practice of medicine during the past year, recognizing in what has been cited, not alone the amount of progress actually made in this period, but the promises therein involved of further developments of knowledge. In commencing this report my plan embraced some consideration of the conditions under which advancement in therapeutics is to be accelerated and made secure. I had intended to consider, as fundamental conditions, enlargement

[1] Ueber die Therapie der Magen Krankheiten von W. O. Leube, Leipzig, 1873.

of our knowledge of the natural history of diseases, and the study of their duration, rate of mortality, occurrence of complications and sequels, under different measures of treatment, by means of the numerical method. I forego this intention, lest my report would become unduly long, and I proceed, in conclusion, to offer some thoughts on a subject which seems to me one of great importance, and one commending itself peculiarly to the interest of the medical profession. The subject to which I refer is the *Natural History of Crime.*

I use the term crime in its collective sense, as embracing offences more or less flagrant, against law, society, and morality, such as acts of violence, especially homicidal, the various forms of theft and robbery, arson, rape, sodomy, and the like. Now, it may be claimed that the investigation of crime comes properly within the scope of pathological study; I will not assert that criminal conduct always proceeds from morbid conditions; such an assertion would, perhaps, come into conflict with theological doctrines, and I have no desire to be aggressive in that direction. It cannot, however, be doubted that abnormal perversions, physical as well as psychical, are, to a greater or less extent, involved in the rationale of crime; and this is a sufficient warrant for the statement that the investigation legitimately belongs to medicine. To determine how far this is true, is one of the objects of investigation.

The phenomena of crime, like all other phenomena, imply laws. They are not all accidental. They have adequate causes, and the operation of these causes is not left to chance. The varied criminal acts denote certain mental conditions sustaining to these acts approximate causative relations, and these conditions are effects of definite causative agencies acting primarily on either the body or mind. There is, in other words, a natural history of crime, the study which embraces the relations of all criminal acts to these proximate and remote causes. How is this study to be prosecuted? I answer, precisely as diseases are most effectually studied in order to discover their causes and laws. Let me take, as an example, one of the best which can be selected, namely, typhoid fever as studied by Louis forty years ago. The natural history of this disease, so far as the researches of Louis extended, stands essentially the same to-day as forty years ago, and this stability will continue to the end of time, provided the disease does not undergo any essential change. I need not remind the Association of the analytical method, inaugurated by Louis, and exemplified by him in the

study of typhoid fever and phthisis, a method which, in the hands of others, has developed our knowledge of the natural history of many other diseases. I would apply this method to the study of crime. Let a hundred or more cases of a particular crime, for example, homicide, be recorded, every thing of importance pertaining to each case being noted. The record should embrace hereditary influences, physical and moral; peculiarities of constitution, mental and corporeal; recognizable past and present diseases, habits of life, education, associations, exciting circumstances, etc. To note all these fully and accurately would require, in addition to opportunity and great labor, a certain amount of acquirement and ability, with judgment, tact, conscientiousness, and freedom from prejudice or bias. The records obtained, they are to be analyzed and compared in all points, and by this analysis and comparison the laws are to be educed; the results are the data for the natural history of this crime. In the same way other crimes are to be investigated.

To carry out this plan of study much time would be necessary, aside from general qualifications for the task. Louis devoted seven years to recording cases of disease at the Hospital la Charité, in Paris, before entering upon the analysis, of which his great work on typhoid fever and phthisis were the fruits. This fact may serve to give some idea of the magnitude of the undertaking. Would the fruits be compensatory for the time and toil? Of course, it would be unwise to attempt to foresee the results of this study, but we may, with propriety, consider beforehand its important relations. Let me briefly notice several of these.

The natural history of crime has relation to our knowledge, approximately, of the limits of individual responsibility for criminal acts. All forms of crime may proceed from mental aberrations amounting to insanity. Every one knows the difficulty of fixing the boundary line between sanity and insanity, both in the abstract, and as applied to individual cases. It may be reasonably expected that valuable assistance will, in this point of view, be derived from a better knowledge than we now have of the laws and causes of crime.

The natural history of crime is closely connected with a correct appreciation of the diversities of human character, and a just, as well as charitable, interpretation of human conduct. Incongruous as it may to many seem, theft and other criminal modes of obtaining property may involve objects and motives which are intrin-

sically philanthropic; and instances have occurred of murders committed to acquire means for relieving the wants of others.

Many, if I do not err, suppose that one flagrant criminal act implies a character radically and totally bad, the only restraining force being the fear of legal punishment, and a dread of the odium of public opinion. Physicians, more than those of any other calling, know this to be untrue, they, more than others, having the opportunity of observing not unfrequently, conjoined with certain defects or perversions of character, traits which do honor to human nature.

The natural history of crime touches that department of jurisprudence which deals with the punishment of criminal acts. The question arises, has not the time come for a reconsideration of the principle which inflicts penalties exclusively to frighten evil-doers? This principle, while the object is very imperfectly fulfilled, takes no cognizance of the welfare of the criminal, and, as is well known, often tends to place irretrievably without the pale of sympathy and brotherhood, those who have fallen under the ban of legal justice. Might not more knowledge of the laws and causes of crime lead to modifications of the modes of dealing with offenders against society and law more consistent with true Christian philanthropy?

The natural history of crime, finally, is the proper basis of the best means for its prevention. As the power to prevent disease is commensurate with our knowledge of etiology, so a thorough acquaintance with the laws and causes of crime must be the foundation of effectual measures for preventing it, thereby, at the same time, reaching the welfare of those who without these measures would become criminals, and affording the safest and best protection for society.

I am deterred from giving further expression to thoughts pertaining to this subject, not alone by the fear of occupying too much time, but by some doubt whether the subject will be regarded by all who hear me as appropriate for this occasion. I would have the remarks which I have made, considered in the light of a plea for the study of the natural history of crime to be admitted within the domain of medicine. If the claim be acknowledged, what is needed is, not discussion, but work. It has been with me a dream in the past to be able to become a worker in this field of study. This dream cannot be realized, and I must be content with the hope of communicating to others, in a measure, my convictions of the importance of the subject.

REPORT ON THE NECESSITY FOR COINCIDENT CLINICAL AND METEOROLOGICAL OBSERVATIONS AND RECORDS IN THE STUDY OF ETIOLOGY; AND ON THE INFLUENCE OF ATMOSPHERIC CONDITIONS IN THE DEVELOPMENT OF BOWEL AFFECTIONS OF CHILDREN.

No department of medical science presents to the careful student less satisfaction than etiology in its present condition. With a steadily increasing tendency to refer all acute diseases, whether epidemic, endemic, or sporadic, to specific causes, or viruses, capable of propagation by fermentative or zymotic action, there is an equal tendency to indulge in hypotheses instead of carefully observed facts. That the prevalence of many important diseases is influenced to a very great degree by season of the year and local sanitary conditions, is apparent to all. For instance, the bowel affections of children, cholera, periodical fevers, yellow fever, etc., prevail almost wholly in the summer and autumn; while pneumonia, croup, catarrh, and rheumatism prevail chiefly in the winter and spring.

But if we attempt to go beyond these general and easily recognized facts, and inquire for the particular element or elements more immediately concerned in the production of any one of these diseases, we are met by difficulties not easily overcome. Chief among these difficulties, is the absence of continuous carefully recorded facts, both in regard to the appreciable conditions and qualities of the atmosphere, and the *date* of the initial symptoms of diseases.

We have an abundance of meteorological tables, presenting the *mean* daily, monthly, and annual temperature, the moisture, the rain fall, and the extremes of heat and cold; but the equally important items relating to the direction and velocity of the winds, the daily variations of temperature, and the electric and ozonic conditions of the atmosphere, are either omitted, or so imperfect as to be of little value. On the other hand, recorded

observations in regard to the date of the commencement of the active phenomena of disease, are almost entirely absent from the pages of our medical literature. The statistics of mortality give us only the date of deaths, but neither inform us correctly concerning the whole number of cases of sickness, nor the date at which any cases begin. To study satisfactorily the causes of all acute diseases not known to be propagated by specific contagion engendered in the body of the sick, we need three distinct series of observations and record, made simultaneously, in a sufficient number of places, and continued through a series of years. One of these should consist of a complete registry of atmospheric conditions, including electricity and ozone. The observations and records now made under the direction of the signal service bureau of the general government, include a sufficient number of stations, and are sufficiently complete, except in regard to electricity and ozone. And we are glad to learn that a committee appointed by this Section of the Association at Detroit, of which Dr. J. M. Toner is Chairman, has succeeded in inducing the superintendent of that governmental bureau to add these two important items for observation and record, to those already made by the men in charge of the several stations. Another series of observations should be made in the same localities where the meteorological records are kept (so far as these are inhabited), by active and intelligent practitioners of medicine, who should endeavor to ascertain and record the exact date of the commencement of active symptoms in all attacks of acute disease coming under their observation, and the date of relapses, when such occur.

A third series should consist in a systematic microscopical examination of the atmosphere, in accordance with a uniform plan in regard to the times of day and method of observation, and in as many of the same localities where the meteorological and clinical observations are made, as competent observers could be found who would faithfully carry on the work. It is obvious that a comparison of the results of the first two series of observations would enable us to know the exact relation between given conditions of the atmosphere and the development of different forms of disease. It would enable us further to trace the relation between the *degree* of certain atmospheric conditions, and the *severity* of the attack of disease.

While the third series of observations, compared with the results of the first and second, would go far to decide the question whether

the coincidence of certain atmospheric conditions developed special organic germs; and whether these bore any direct relation to the commencement, progress, and decline of certain forms of disease; it is only by carefully considered methods of investigation, established in many localities, and executed faithfully through a series of years, that all the data can be obtained for determining the true etiology of all acute diseases whether endemic, epidemic, or sporadic.

It seems to us that, with the aid now obtainable from the signal service bureau of the government, covering the most expensive part of the series of investigations needed, this Association could easily plan and execute such arrangements as would secure the coincident clinical and microscopical observations and records. Let this Section continue the appointment from year to year of a well-selected committee, charged with the duty of selecting, from the whole number of signal service stations, those in each part of the Union most important in a medical aspect, and of engaging in each of these selected places one or more competent practitioners to keep the necessary clinical records in regard to the initial stage of acute diseases; and as far as possible one to make daily microscopic examinations of the atmosphere. Let the committee of the Section receive, semi-annually, the detailed reports from all the selected stations, and after carefully comparing the meteorological, clinical, and microscopical series with each other, tabulate the results and present them at each annual meeting of this body.

It is true that such a scheme would require on the part of all engaged in it much patience and pains-taking labor. And this, above everything else, is just what the science and literature of our profession most need. At present we are overwhelmed in every direction by detached facts, partial or incomplete observations, imperfect records, and hasty generalizations. And if the several Sections of this Association would give more time to the devising of more complete methods of investigation, and the patient supervision of their execution until completed, they would do more to advance the science and art of medicine in five years, than could be accomplished in fifteen by receiving and discussing reports and papers presented by individuals in the ordinary way. It was in accordance with these views, that this Section of the Association at the last annual meeting appointed two committees, one to superintend the meteorological series of observations, and another the clinical.

As chairman of the last-named committee, the undersigned entered into correspondence with a number of active practitioners located in several of the places where meteorological observations were made under direction of the signal service bureau, and succeeded in engaging most of them in the work of clinical observation, with special reference to recording the date of actual commencement of acute attacks of disease.

So much time has been necessarily consumed in these preliminary arrangements that we are not able to present at this meeting more than a very limited number of facts. For instance, Dr. J. M. Peabody, of Omaha, Nebraska, reports the date of initial symptoms of 49 cases of diarrhœa, 22 of cholera morbus, and 23 of cholera infantum, total 94 cases, during the summer of 1874. His own table and comments are as follows:—

Table showing initial day of cases of Diarrhœa, Cholera Morbus, and Cholera Infantum, as occurring in the practice of Dr. J. H. Peabody, Omaha, Nebraska.

	Year 1874.																			
	May.		June.							July.										
	19	25	1	16	18	24	27	29	30	1	3	5	6	7	9	11	12	13	14	15
Diarrhœa			1		1	2			1	1	3	1	5	1	3	1	1	1	1	1
Cholera Morbus	1	1		3								1		2		1	1			
Cholera Infantum			1	2		1	1	1	1	1	2		4		1					

	July.								August.						Sept.			Total.
	16	17	18	19	20	24	27	31	3	12	16	17	19	26	1	7	9	
Diarrhœa	2	2	1	1		4	2	2	1	1	1	2	1	2	3			49
Cholera Morbus	2			2	1	2				2				3				22
Cholera Infantum	1			1	1							1				3	1	23
																		94

Previous to June we have very little hot weather, in fact none of sufficient duration to cause sufficient depression to produce cholera infantum; but in June, July, and August the heat for a few days at a time is excessive; as the heat increases, so do the cases of diarrhœa, cholera morbus, and cholera infantum. The 3d, 4th, 5th, and 6th of July were very hot, the thermometer standing at 102° in the shade at noon.

It will be seen that of these 94 cases of bowel affections, 2 commenced in May, 15 in June, 56 in July, 14 in August, and 7 in

September. Of the 2 occurring in May, one was on the 19th and the other on the 25th. Of the 15 commencing in June, five are dated on the 16th, three on the 24th, and two on the 30th; making two-thirds of all the cases during the month commence on three days. Of the 56 cases recorded in July, twenty-three commenced between the 3d and the 9th inclusive, twenty between the 16th and the 24th, leaving only thirteen cases to be distributed over the other fifteen days of the month. Of the 14 recorded in August, three commenced on the 12th, three on the 17th, and five on the 26th, leaving only three cases for all the rest of the month. By comparing these dates in reference to the commencement of cases of diarrhœa, cholera morbus, and cholera infantum in Omaha with the details of the meteorological records at the signal service stations in that town, there will be found a striking coincidence between the rapid multiplication of cases and continuous high temperature with stillness or only slight winds.

In Chicago, these same coincidences were forced upon our attention first during the cholera epidemics of 1850–1–2–4; and we have kept imperfect records concerning the relations of certain atmospheric conditions to the origin of acute diseases, from that time to the present. For instance, during the summer of 1874, of 43 cases of cholera infantum coming under my observation, concerning which the days of commencement could be identified with reasonable certainty, two commenced on the 20th, five on the 21st, and three on the 28th, 29th, and 30th of June, respectively; six on the 3d, four on the 4th, three on the 6th, six on the 25th of July, leaving only eight cases to occur on all the other days of June, July, and August. By referring to the details of the meteorological records at the government signal office in Chicago, it will be found that the first season of high temperature continuing night and day, commenced on the 17th of June, and continued until the 28th, with very light southerly winds, and only a slight rain on the 25th. During this time the mercury in the thermometer ranged from 75° F. in the night to 92° F. at midday. On only two evenings did it fall as low as 72° F. It was not until this season of high temperature, with its coincident meteorological conditions, had progressed for three days, that the bowel affections began to multiply with notable rapidity. A sudden change in the wind to the northwest during the night of the 25th, followed by a lower temperature during the 26th, was accompanied by a decided check to the development of new cases, which continued until the first

week in July. Although the temperature became high at noon on the 27th of June and continued so until the evening of the 28th, yet a change similar to that on the 26th occurred on the 29th with high northwest winds. These changes continued until the morning of the 3d of July, when another steady warm season began and continued with light winds, mostly from the south and southwest until the morning of the 9th. It was on the 6th and 7th of July that we had the maximum temperature of the summer, the mercury standing at 95° F. at 2 P.M. of each day. Yet the highest mean temperature for any given week during the summer of 1874 was that ending on the 27th of June, which gave a mean temperature of 80°.3, while that ending on the 11th of July gave a mean of 75°.3. The next steady wave of high temperature commenced with a light south wind on the 23d, and culminated on the evening of the 25th, when the mercury stood at 93° at 2 P.M., and at 89 at 9 P.M. But during the next twenty-four hours the atmospheric currents changed, and the mercury fell ten degrees. It is thus seen that the weeks ending June 27th, July 11th, and July 25th, were each characterized by special waves of continuous high temperature, and were each marked by a peculiarly rapid multiplication of attacks of serous fluxes from the alimentary canal. It will be noted, that, during the same week that the temperature reached its highest maximum of 95° in Chicago, Dr. Peabody states it to have been 102° at Omaha, Nebraska.

We give these limited observations concerning the relations of atmospheric conditions and a particular class of familiar diseases, in Omaha and Chicago, simply to illustrate the nature of the work we need to have done, and to show that the committee appointed last year have made a beginning, in the hope that you will deem it best to perfect the plans and prosecute the work until we have determined, on a scale so large as to insure accuracy, the exact coincidences between meteorological and topographical conditions, and the prevalence of the various forms of acute disease. Then, and not until then, can we determine how far certain conditions of the former stand in the relation of *cause* to the latter. And when we have thus determined that certain meteorological and topographical conditions bear the relation of *cause* to certain forms of disease, then will the chemist and the microscopist be better able to determine whether such specified conditions produce their morbid effects by some modification of the natural elements involved, such as heat, electricity, and ozone, or by the rapid evo-

lution of specific organic germs. And it is hardly necessary to add that, in the same proportion as we advance the department of etiology in the direction of scientific exactness, shall we open the way for corresponding advances in rational therapeutics and hygiene.

Your committee will close this brief preliminary report by recommending for your consideration the following resolutions:—

1st *Resolved*, That the thanks of the American Medical Association are tendered to General Myer, Superintendent of the Signal Service Bureau, for the promptness with which he is preparing to add observations concerning the electric and ozonic conditions of the atmosphere to those heretofore made at the signal service stations, and for the readiness he manifests to permit the records in his department to be used for the advancement of medical, as well as general science.

2d *Resolved*, That the Chairman of this Section of the Association be requested to renew the appointment of a special committee of three, whose duty it shall be to prosecute diligently the work indicated in the foregoing report, and report progress at the next annual meeting of the Association.

Respectfully submitted,

N. S. DAVIS,
J. B. JOHNSON,
H. A. JOHNSON,
Committee.

A CASE OF CYSTIC DEGENERATION OF THE KIDNEYS, WITH REMARKS.

By JOHN A. OCTERLONY, A.M., M.D.

D. Hays, a laborer, aged forty years, born in Ireland, was admitted to the Louisville City Hospital on the 5th of February, 1874, on account of syphilitic disease of the bones of the nose.

He was not emaciated, but his complexion was sallow and somewhat cachectic, and the expression of his countenance was dull and heavy. His breath was exceedingly offensive. The tongue was heavily coated with a whitish fur, the skin was dry, and the bowels were constipated.

His pulse was of good quality, and 80 to the minute. The heart and lungs were apparently healthy. The urine was not examined. He did not complain of pain of any kind.

Little or nothing could be gleaned of his previous history, and, for some time after his admission, the medical officer whose patient he was, seems to have had no suspicion that there was any other disease than caries of the nasal bones.

On the 13th of February, 1874, and without any marked premonitory symptoms, he became comatose; his breathing was slow and stertorous, with flapping of the cheeks; but there were no convulsions. He remained in this condition nearly five days, at the end of which time he died.

The opinion was expressed by those who saw him during this period that he had compression of the brain from syphilitic nodes on the internal surface of the cranium.

I did not have charge of the patient, and saw him only after his death.

The autopsy was performed by me with the assistance of the resident graduates of the hospital. The body was well nourished, rigor mortis not well marked. No cicatrices could be discovered either on the genitals or in the groins, or on other parts of the

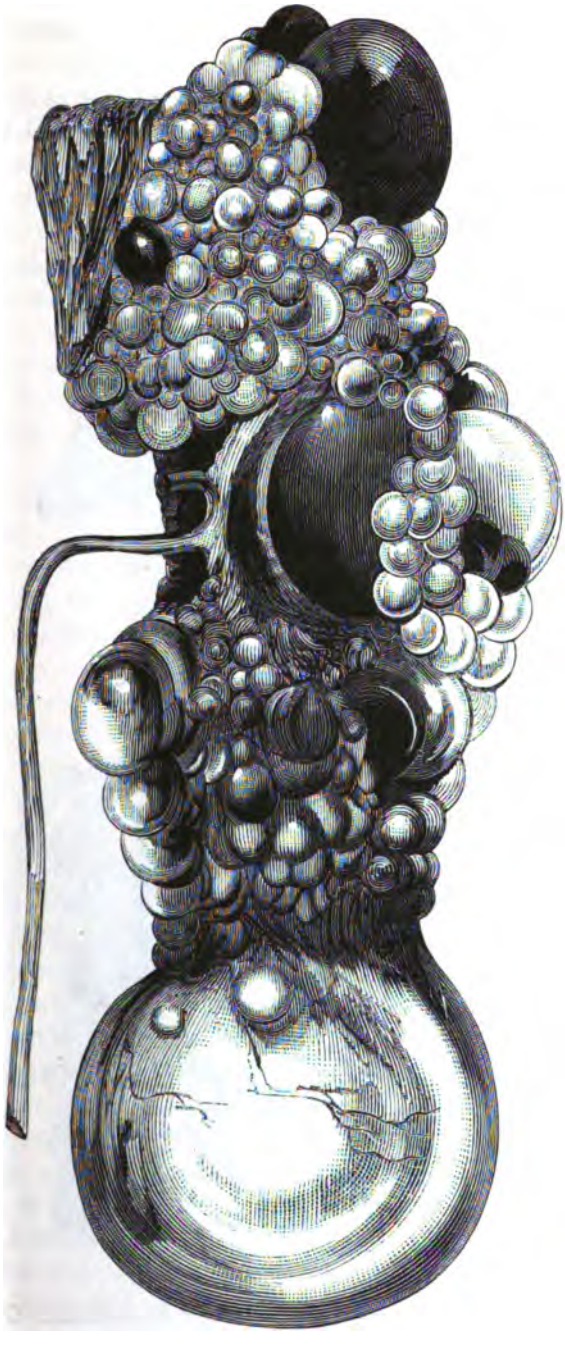
skin. There was unusual prominence of both lumbar regions, which gave to the abdominal surface a square and flat appearance. Percussion gave a dull sound over both these regions, from the liver almost down to the crest of the ilium; and there was increased resistance on palpation, as if there were a soft solid mass under the hand.

On removing the calvarium, both its internal and external surfaces were found entirely free from nodes. There was considerable arachnoid effusion of serous character, and the pia mater was congested. A small quantity of serum was found in the lateral ventricles, and a great number of small pearly cysts with clear watery contents covered the choroid plexus. The brain substance appeared healthy. The bones forming the right nasal cavity were carious, but those of the left and the cranial surface of the ethmoid bone were perfectly healthy.

On opening the chest the right lung was found hypostatically congested and firmly attached posteriorly by old pleuritic adhesions. The left lung was similarly congested, and had old adhesions to the pericardium and the diaphragm.

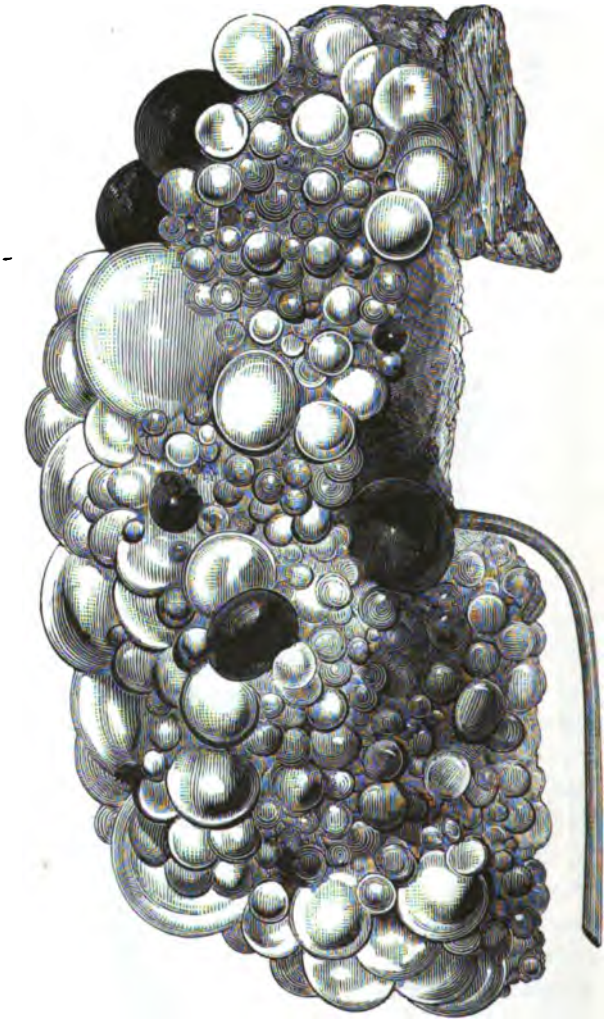
The heart was pale, flaccid, and much dilated; large and firm dark clots occupied the cavities. The mitral valve was somewhat rough and thickened by atheroma. Both large and small intestine appeared healthy. The liver was of normal size, but of dark color. The spleen was quite small, and had become pushed up against the diaphragm by the LEFT KIDNEY which descended to a level with the crest of the ilium. It lay in front of the descending colon; the upper border and the supra-renal capsule pressed against the diaphragm. The lower portion protruded above the coils of intestine, and was composed of a very large cyst (see wood-cut) four inches in its largest diameter, and having a thin delicate wall with clear transparent amber-colored contents. On removing this kidney, it was found measuring twelve inches in length, ten inches in circumference, and four inches across at its widest point. The weight was fifty-two ounces.

It was composed of closely aggregated cysts of various sizes; some had almost colorless contents, others held an amber or straw-colored liquid, and still others were of a dark chocolate color with grumy opaque contents. These cysts were separate and distinct, and were bound together by large quantities of connective tissue. The ureter and pelvis were perfectly open. The pelvis presented no trace of papillæ, the calices were deep and funnel-shaped, com-



municating with cysts. On bisecting the mass, not a particle of secreting structure could be detected.

The RIGHT KIDNEY formed a large tumor lying in front of the ascending colon; its upper border in contact with the liver, and its inferior extremity lying almost on a line with the crest of the ilium. It measured eight inches in length, four and a quarter



inches in width, and eleven inches in circumference. Its weight was forty-eight ounces. The renal parenchyma was entirely lost.

The pelvis and ureter were open, the former presenting the same appearance as on the opposite side. The cysts seen on the surface were smaller and more uniform in size than those of the left kidney, and the connective tissue was less abundant.

The interior, however, as seen in bisecting the mass, was made up of large cysts, many of them having chocolate-colored contents. The septa were quite thick here, and there was a large amount of connective tissue stroma.

The *bladder* contained six ounces of pale fluid, having a faintly urinous odor; reaction neutral; sp. gr. 1010; and with a trace of albumen.

Microscopic Examination.—Muscular fibres from the ventricular walls and from the musculi papillares were in a state of granular degeneration.

The cyst walls were composed of white fibrous tissue lined with epithelial cells, which were also found in great number in the fluid of the cysts. The latter also contained blood-discs, fat granules, and plates of cholesterine. The blood discs, many of which were disintegrating, were most abundant in the cysts with dark contents. The fluid was distinctly albuminous.

REMARKS.—*Cystic Degeneration of the Kidneys* is a rare affection, and the literature on the subject is quite meagre. These considerations will, I hope, be remembered in extenuation of the probable defects of this brief essay.

The obscurity of the disease in question, as well as the wonderful changes wrought by it in the kidneys, contribute to render it deeply interesting to the pathologist and clinician.

Illustrative of the rarity of this disease is a passage in Dr. Loomis' recent book on "Diseases of the Respiratory Organs, Heart, and Kidneys." In it he expresses the opinion that cystic degeneration of the kidneys is interesting only on account of its rarity, and then dismisses the whole subject, saying the disease is so rare that he will not detain his reader by a description of it.

Renal cysts may occur under very different conditions, and a brief review of them will be found useful in promoting a comprehensive view of the particular form under consideration.

Cysts in otherwise perfectly healthy kidneys are not unfrequently met with in *post-mortem* examinations; they are usually either single or few in number, and vary in size from that of a pea to that of a walnut. Their most common seat is the surface of the

kidneys[1] but they may also be found in the interior of the gland, chiefly, however, in the cortical substance. They are surrounded by a thin, delicate wall of connective tissue, lined with polygonal pavement epithelium[2], and contain a clear colorless, or pale-yellow liquid, watery, and rarely gelatinous, which yields albumen phosphates, carbonates, leucin, tyrosin, sometimes a large amount of cholesterine, but *no urinary constituents*. This latter statement is made with great positiveness by Rindfleisch, but Roberts more prudently remarks that urea and uric acid are found in them *very rarely*. In other respects the renal substance is healthy, except possibly from the effects of pressure of the cysts upon their immediate surroundings.

Very little is known as to the origin of this variety of renal cysts. They are said to not arise from changes in the uriniferous tubes and to be, like congenital cystic degeneration of the kidneys, entirely unassociated with previous inflammation.

But, as, according to Roberts, urinary constituents *may* be found in their contents, and as, according to Virchow, congenital cysts originate in intra-uterine inflammation of the tubes, it is possible that further investigation may show the connection of these cysts with the uriniferous tubes and antecedent inflammation.

A second class of renal cysts is found in "Bright's disease," with a small and contracted or granular kidney. Here, as in the first variety, the cysts present great diversity of dimension. They may reach the size of a pea, or even of a hazelnut, but very many are so small as to be microscopic, and of the calibre of the uriniferous tubes. They are scattered singly through the parenchyma, or crowded close together in rows, like beads strung on a thread. Their seat is in the medullary substance. According to Rindfleisch it is especially in the second-fourth, counting from the apex, that they are most frequently found; from here toward the cortical portion they gradually lose themselves. The contents are an albuminous and saline fluid, *free from urinary constituents*. Rokitansky and Simon held that the origin of these cysts is in germs, or cells which undergo an enormous increase in size; but this theory has found few adherents. The generally accepted opinion, I believe, is that the cysts are formed by circumscribed dilatations of the uriniferous tubes, induced by localized obstructions of the

[1] Roberts, Urinary and Renal Diseases.
[2] Rindfleisch, Pathological Histology.

latter by exudation matter, or by obliteration of the tubes at intervals from compression by new and contracting tissue. In Bright's disease with a small contracted kidney there may also be cysts in the cortical substance; like those already described, they vary in number and magnitude. Their beginning is often enough in the convoluted tubes which in some regions become dilated in spots; the walls of these parts merge together, and the whole mass has the appearance of a single cyst divided into compartments by their septa. These after a while give way, and the whole forms one large cavity, in which the shreds of the original partition wall may long be discerned. The presence of these two varieties of disseminated cysts, is of no clinical interest, as they give rise to no symptoms; hence, a further elaboration of this part of the subject would be rather beyond the scope of this paper, in which it is my purpose to deal especially with those varieties of renal cysts which may be recognized at the bedside.

General Cystic Degeneration of the Kidneys.—Here the morbid formative process is so active, and these little globular cells become so exceedingly numerous, that the glandular parenchyma of the kidneys almost or entirely disappears.

This form of cystic degeneration is either *congenital* or *acquired.*

In the congenital form of the disease, and as a result of it, the infant may die during parturition; or, in consequence of the disproportionate size of the abdomen, embryotomy may have to be performed, and has been already resorted to; in still another class of cases this disease of the fœtus appears to have been the cause of premature labor.

But even when carried to the full term the child, if not still-born, dies after a few unsuccessful efforts to breathe. Both kidneys are always affected; they may be as large or even larger than the normal kidneys of an adult, and have been found to weigh as much as four or even six ounces. The enlarged glands fill the abdominal cavity, push up the liver and the diaphragm, and thus mechanically prevent expansion of the lungs. On opening the kidneys they are seen to be composed of cysts, and little or nothing of the secreting substance remains.

These cysts are formed by dilatations of the convoluted tubes, as already described; that is the view of Virchow and Förster. Rindfleisch expresses a different opinion, and holds that, although the tubuli may undergo this degeneration in their continuity, still it is constantly but one, and the cysts here never arise or grow by

the confluence of several; the partition walls rather appear to become thicker the larger the cysts grow. All the authorities consulted admit that the point of departure in this variety of cyst-formation is often in the Malpighian capsules, which become obstructed and dilated, the vascular coil is compressed, and the capsule recedes, the interspace being filled with fluid which at first is urinous and later becomes albuminous. Various other deformities usually coexist in congenital cystic degeneration of the kidneys. In one case the fœtus was anencephalous, and some of the fingers on both hands and some of the toes on one foot had grown together and were united by a web-like membrane. In another case there was encephalocele (hernia cerebri), club-foot and club-hand, six fingers on the left hand and six toes on each foot. In almost all cases of this kind there has also been malformation of the urethra, bladder, ureter, or of the pelvis of the kidney, and it has been the exception to find these lower urinary passages open. The renal artery at its origin from the aorta is greatly contracted, and the veins proportionately increased in calibre.[1]

According to Virchow the following is the order of events culminating in congenital cystic degeneration: first there is an impaction of uric acid and urates in the straight tubes; the irritation set up by the presence of these substances terminates in inflammation, and, as a late result, adhesion of the walls with obliteration of the lumen of the tubes and the development of large quantities of connective tissue between the calices and the papillæ.

These conditions he found existing in every case he examined. Retention and accumulation of fluid are the consequences of closure, the final result being dilatations of the tubuli and Malpighian capsules which form the cysts.

Acquired Cystic Degeneration of the Kidneys in Adults.—This is probably the rarest of all the affections to which the kidneys are liable. Many works on medical pathology merely mention the disease by name, and others omit it altogether.

The rarity of the disease is almost as forcibly illustrated by the fact that Roberts has endeavored to collect all the cases published as by the small number, only fifteen, which he could obtain. In this as in the congenital form both kidneys are always affected, though not unfrequently in different degrees. They sometimes attain huge dimensions, weighing several pounds, and their pres-

[1] Rindfleisch, op. cit.

ence may be detected during life. The place of the normal kidneys, and, indeed, much more than their normal space, is occupied by an immense number of cysts, the whole resembling somewhat the shape of a kidney. The cysts vary in size from the smallest microscopic vesicle to a bladder as large as an orange. They do not communicate with each other or with the pelvis of the kidney, though several cysts may become fused together by the breaking down of the septa. The contents are urinous in the early stages, and even later, when the cysts are quite large, urea has been found in "tolerable amount." Some, however, deny that urinary constituents are ever present. The fluid is always more or less albuminous; cholesterine plates and leucocysts are often found in it, and blood-corpuscles are often so abundant that some of the cysts acquire a dark brown color. The cyst wall is similar in structure to that of the varieties already described, viz., it consists of connective tissue and is lined with epithelial cells.

The parenchyma of the kidney is always greatly diminished, and often entirely lost.

The mode of origin of the cysts in this is very much the same as in the congenital type of the disease. Virchow thinks circumscribed spots in the region of the convoluted tubes are the points of departure, others hold that the straight tubes, as already described, give origin to the cysts; and dilatations of the Malpighian capsules, no doubt, also contribute to the formation of a certain number. Unlike the preceding variety, the pelvis of the kidney, the ureters, and urethra are here open and healthy.

As to the determining cause of this morbid process by which the secreting substance is so extensively destroyed, nothing is positively known. It has been attributed to "an inflammatory hyperplasia of the connective tissue, which has particularly attacked the environs of the larger renal vessels at the medullary limits."

Whether this be a correct interpretation or not, there certainly is an excessive development of connective tissue in these cases.

The relations of cystic degeneration to Bright's disease is a question of practical import. They have some features in common, and, as the distinguished Dr. Austin Flint has remarked, "under certain circumstances this affection will be treated as Bright's disease prior to the autopsy." Cysts occur with sufficient frequency in kidneys with Bright's disease, and both affections are, under some circumstances at least, so far referable to antecedent inflammation as to make this a possible common origin. But

what causes determine one line of development in some cases and another line of development in other cases, of these we are entirely ignorant.

The access of cystic degeneration is insidious and its progress slow. Men appear to be more frequently attacked than women in the proportion of two to one. Age is a factor of some weight, and, so far as I can learn, the disease has not been observed in persons of less than thirty years. Most of the cases have been between forty and fifty years of age. Data are almost entirely wanting as to the duration of the disease, but its course is regarded as essentially chronic.

Clinical observations have been very limited; hence our knowledge of even the symptoms is rather scant and imperfect. On analysis of recorded cases, and on consulting authorities within reach, the following symptoms appear all that have been noted:—

SYMPTOMS.—1. Dyspepsia, which is often of a very severe and distressing character.

2. Lumbar pains.

3. The urine is usually abundant until very late in the disease, when it becomes scanty or its secretion is suddenly arrested.

4. It is of low specific gravity.

5. There is usually albuminuria, though very variable in amount.

6. Hæmaturia at intervals occurs in a certain proportion of cases.

7. Œdema of the feet and legs is not uncommon. Austin Flint and others have noted that there may be general dropsy, but death may occur without even puffiness of the ankles.

8. The most important symptom is the presence of a tumor in each flank, which sometimes attains a very large size.

It is probable that with an increase of recorded cases our knowledge of the symptomatology of this disease will become more ample and complete. The above brief abstract of symptoms, however, is not entirely inadequate to meet the wants of the clinician. For when one considers their character, their peculiar grouping, and the manner and course of development, a diagnosis can in most cases be reached, at least after the appearance of the tumors in the flanks.

The *differential diagnosis* of cystic degeneration of the kidneys is not always easy.

In the early stages, before the appearance of tumors, a differentiation from Bright's disease must sometimes be impossible. How-

ever, the progress in each is rather different. The following exhibits the most important points of difference:—

Cystic Degeneration.	Bright's Disease.
Tumor in the flanks.	None.
Dropsy generally slight, and occurs late.	Dropsy occurs early, and is extensive.
Hæmaturia not unfrequent.	Hæmaturia absent.
Skin comparatively normal.	Skin dry and difficult to excite to action.
Hypertrophy of heart rare.	Hypertrophy of heart common.
Intercurrent inflammations do not occur.	Marked tendency to intercurrent inflammations.

In some cases of hydro-nephrosis, especially when both kidneys are involved, it may be impossible to distinguish that disease from cystic degeneration, but ordinarily the following points will suffice for a differential diagnosis:—

Cystic degeneration occurs in persons after thirty years of age.	Hydro-nephrosis occurs usually in persons less than thirty years of age.
Always bilateral.	Most often unilateral.
Hæmaturia.	Absent.
Tumor soft, solid, not fluctuating.	Tumor fluctuating.
Tumors persistent and unchanging, except by gradual increase.	Tumors subside suddenly at times, with coincident copious discharge of urine.
Prognosis unfavorable.	Less so.

The differential diagnosis between cystic degeneration and cancer of the kidney is established by attention to the following points:—

Cystic Degeneration.	Cancer.
1. Bilateral.	1. Generally unilateral.
2. Tumor may be large.	2. Tumor attains an enormous size, much larger than is ever reached in cystic degeneration.
3. Tumor movable; it rises and falls with the diaphragm.	3. Tumor stationary, and does not move with the diaphragm.
4. Runs a rather slow course.	4. Runs a more rapid course.
5. No cachexia.	5. Cachexia sets in early, and is well marked.

The *prognosis* in cystic degeneration is always unfavorable, and death occurs, from arrest of the action of the kidneys, either by coma, as in the case above reported, or by sudden convulsions.

The *treatment* is very unsatisfactory and entirely unavailing to effect a cure. The object of the physician should be to relieve dyspepsia, to maintain and improve nutrition, to promote the action

of the kidneys, or to compensate for their incapacity by exciting the skin and bowels to vicarious action. The means tending to further these results are familiar to all intelligent practitioners, and it is probable that by their judicious employment the patient's condition may be ameliorated and the unfavorable termination delayed.

SOME PRACTICAL OBSERVATIONS ON EXOPHTHALMIC GOITRE, AND ITS TREATMENT.

By ROBERTS BARTHOLOW, A.M., M.D.,

PROFESSOR OF THE THEORY AND PRACTICE OF MEDICINE, AND OF CLINICAL MEDICINE, IN THE MEDICAL COLLEGE OF OHIO, ETC.

No case of Graves' or Basedow's disease can be considered complete without the presence of three characteristic phenomena: irregular and rapid action of the heart, enlargement of the thyroid body, and exophthalmos. This group of symptoms is so familiar under the designation of *exophthalmic goitre*, that it would be a reflection on the intelligence of this body to occupy time with an account of its clinical history. But many cases are met with in which but one or two of the typical symptoms are present. As regards the relative frequency of the physiognomical characteristics, the increased action of the heart stands first, the enlargement of the thyroid second, and the exophthalmos third. It is no doubt true that many cases of rapid action of the heart, with paroxysmal palpitations, have their origin in the same pathological state; but owing to causes at present unknown, the other symptoms are not produced, and the cases do not proceed to their full development.

It is equally certain that many cases of so-called *goitre* are really examples of Graves' disease—the enlargement of the thyroid only attracting attention. The capital distinction between goitre and Graves' disease is this: in goitre there exists a hypertrophy or hyperplasia, or both, of the proper gland elements; in Graves' disease, the increase in the size of the thyroid is due largely to dilatation of the vessels, and to the hypercinesia of the heart, and any increase in the size of the gland elements is secondary and non-essential. In the one, enlargement of the gland is continuous or uniform; in the other, it is subject to great fluctuations. I need hardly stop to suggest the important bearing which these facts have on the treatment of the two states, and the necessity

which exists in every case of apparent goitre to study the action of the heart and the cervical vessels. It must be evident, I think, that the use of the word *goitre*, to designate this peculiar malady, is unfortunate; for true goitre, except in the single symptom of swelling of the thyroid, is in every respect unlike exophthalmic goitre.

Graves, who first described this malady, distinctly recognized the difference in the character of the thyroid swelling in the two diseases. (*Clinical Lectures on the Practice of Medicine*, ed. by Néligan, vol. ii. p. 193.) He, no doubt, correctly indicated the nature of the change in the thyroid in the following remarks:—

"The sudden manner in which the thyroid used to increase and again diminish in size, and the connection of this with the state of the heart's action, are circumstances which may be considered as indicating that the thyroid is slightly analogous in structure to the tissues properly called erectile."

This explanation of the enlargement of the thyroid, and of the changes in size which it undergoes, has been made by Henock, Bullar, Laycock, and others. By Henock the change in the thyroid has been designated *struma aneurysmatica* (*Virchow's Geschwülste*), and by Laycock, *bronchocele vasculosa*. Virchow, who distinctly affirms the changes which take place in the vessels of the thyroid, also calls attention to the hyperplasia of the gland elements, and to the cystic, calcareous, and fatty degenerations which frequently coexist with the vascular dilatations. (*Die Krankhaften Geschwülste, dritter band, erste haelfte*, s. 72, *et seq.*) At p. 12 of the same volume, he gives a drawing of a *struma exophthalmica varicosa*. By Dr. Bullar, two cases were reported under the title of "*pulsating bronchocele*." (*Medico-Chirurgical Transactions*, vol. xliv. p. 37.)

Trousseau, in an admirable clinical lecture on this disease, states that in addition to the hypertrophy of the gland elements, great development of the bloodvessels of the gland may be made out clinically. (*Clinique Médicale*, vol. ii. p. 458.)

We have the high authority of Von Graefe for the assertion that cases of this disease may exist in which there are present merely rapid action of the heart, and such a slight degree of exophthalmos that it is observed only in certain movements of the eye and of the eyelids. When such patients are told to look down, the upper lid does not follow the movement of the ocular globe, and a white rim of the sclerotic comes into view.

This defect of co-ordination is independent of the exophthalmos, and is caused, according to Graefe, by spasm of the superior palpebral muscles of Mueller, which are innervated by the sympathetic. In cases of palpitation of the heart, and a sustained elevation of the pulse-rate occurring in women, although the thyroid may be unaffected, and exophthalmos be absent, the defective movement of the eyelid will indicate the nature of the symptoms.

Illustrative Cases.

Case I.—*Paroxysms of Palpitation of the Heart; Constant Elevation of the Pulse-rate; Intercostal Neuralgia; Occasional Fullness of Thyroid, and Slight Exophthalmos.*

Personal History.—Mrs. H., a Jewess; in complexion a brunette; æt. 32; married, and the mother of four children. She has always enjoyed good health, and is not aware of the existence of any hereditary ailments in her family. She has been subjected to various trials within a few years, in the sickness of some of her children, but more especially in the business failure of her husband.

Disease History.—The symptoms of her present ailment began during lactation, about three years ago. She had more or less constant pain in the right side, chiefly in the intercostal space between the fifth and sixth ribs. About the same time she began to experience attacks of palpitation, lasting several hours. These frequently came on at night, and she was often awakened out of her sleep in a condition of great terror. During the attacks of palpitation she experienced a feeling of extreme anxiety and apprehension, independently of the cardiac disturbance, and an unpleasant suffocative sensation about the throat and neck. When she first consulted me for these troubles I did not realize the real nature of the cardiac disturbance, and supposed the intercostal pain and the paroxysms of palpitation to be manifestations of hysteria merely. For more than two years, and after weaning her child, these symptoms continued without any new developments, the paroxysms of palpitation becoming somewhat more frequent, and the pulse at times ranging much above the normal level. During one paroxysm I found the pulse had risen to 140, and the volume and rhythm were extremely varied. At all other times the pulse-rate continued at 86 to 90. During this period her general health declined. She got out of breath on slight exertion; her lips and tongue were pale, and the selerotic became pearly

white and glistening; her appetite was poor, digestion slow and painful, and constipation alternated with attacks of colic and diarrhœa. She experienced great depression of spirits, was wakeful at night, had attacks of dizziness and singing noises in the ears, and her vision became dim and uncertain. She was altogether so miserable as to declare herself indifferent to life.

During this period she received the usual tonic and chalybeate medicines without any marked relief. Nine months ago, during one of her paroxysms of palpitation, I observed that her eyes had a somewhat staring look, and, when told to look down, the diagnostic sign, so much insisted on by Graefe, had become evident, *i. e.*, the upper lid did not follow the downward movement of the globes. Close examination of the neck disclosed an abnormal fullness of the thyroid region, especially on the right side; but it was by no means well-marked or conspicuous. The character of the case was now made plain. Abandoning all medicines, and directing a suitable hygiene, I used the constant galvanic current as the remedial agent. I applied twenty elements of Siemens and Halske, the negative pole being placed on the epigastrium, and the positive being so applied as to include the cervical sympathetic, the pneumogastric, and the cilio-spinal region within the circuit. The *seances* were ten minutes in duration. The immediate effect of the application was to slow the action of the heart to about the normal, and several applications caused the almost total disappearance of the unpleasant symptoms. Acting by my advice, she has occasional applications made with a view to prevent the recurrence of the symptoms.

Commentary.—This case perfectly exemplifies the observation of Graefe that in many subjects, women especially, exophthalmic goitre may exist for a long time without any other symptom being present—beside the increased action of the heart—than incoördination of the ocular globe and the upper eyelid. When a marked increase in the action of the heart continues for a long time without apparent cause in a young woman, and is accompanied by more or less anæmia, this fact alone is strongly indicative of that peculiar modification of the functions of the sympathetic system to which we apply the term exophthalmic goitre. The usual tonic medication employed in these cases, changes in the social state, and various moral influences may arrest the further development of such cases, and they may never proceed to that point in the manifestation of their objective signs which will determine their

proper nosological classification; yet in their essential nature they rest upon precisely the same modifications in the functions of the sympathetic system.

The quick and lasting improvement which followed galvanization of the sympathetic is another striking effect illustrative of the proper method of treating such cases. As the functional disorder of the heart, the anæmia, and the other objective and subjective phenomena, are dependent on a change in the sympathetic, and, probably, also the pneumogastric, it is certainly more rational to act upon the pathological cause than to commence by treating the effects of the central lesion.

CASE II.—*Palpitation and Increased Action of Heart; Goitre of many Years' standing; Pigmentary Discolorations of Neck and Hands; Cachexia, etc.*

Personal History.—Mrs. R., æt. 54. Dark hair and eyes, full habit, and weighing one hundred and fifty-two pounds. A widow, mother of two children. A lady of very considerable culture, refined, and having an excellent social position. Having had ample means she has lived a rather luxurious life, entertained largely during the life-time of her husband, and has always been engaged, often very closely, in various social and religious enterprises.

Since the death of her husband, four years ago, she has had a great deal of anxiety, some business and pecuniary troubles, and has changed somewhat her mode of living. During her whole married life she has been remarkably active, cheerful in disposition, and free from bodily ailments, except the derangements to be presently described.

She passed through the climacteric period without accident, and has had since no troubles in the pelvic viscera. There is no history of hereditary neuroses.

Disease History.—For about fifteen years she has had a considerable tumor of the thyroid, and attacks of palpitation of the heart of great violence. The size of the goitre has varied from time to time, and she has always observed a considerable enlargement during the attacks of palpitation. The paroxysms of cardiac excitement have usually lasted twenty-four hours, and the maximum number has been three in each week. She has observed that her pulse-beat has, during the whole period of the existence of the cardiac trouble, been much above the usual rate. The condition

of the thyroid and the attacks of palpitation have varied a good deal during the years in which they have existed, but a decided increase in them has been observed since the climacteric, especially within the last two years.

Status Present.—Mrs. R. is extremely well-preserved for her years. She is very slightly gray, has no *arcus senilis*, and the arteries at the wrist are not rigid.

Brain and Nervous System.—She has occasional attacks of vertigo and strange sensations in the head, but suffers most from the intense beating of the carotids. During the attacks of palpitation her sleep is disturbed by the noises in the ears and the strong whizzing pulsations. Her special senses are normal, and there is no alteration in the sensibility to touch, to pain, and to temperature. There is no exophthalmos, and no defect of coördination in the movements of the ocular globe and the upper lid. Her face has, however, a somewhat startled look, but I am assured that no alteration of expression has been observed by her friends.

Circulatory System.—The action of the heart is at all times heaving. The area of cardiac dullness is increased in all directions, but there are no murmurs. Under the most favorable circumstances as to quiet, her pulse is never less than 96, and, during the paroxysms of palpitation, rises to 120 and even to 140. It is irregular as to rhythm, but there are no intermittences, true or false. The sphygmographic traces exhibit the following peculiarities: the length of the pulse waves varies considerably, the summits are rounded, the dicrotism is but faintly marked. There is an obvious difference in the energy of the radial as compared with the carotid pulsations. The carotids, especially the right, at all times pulsate strongly, but in one of the paroxysms the pulsation is vehement. The thyroid has a distinct expansile movement of great force, which, during the attacks of palpitation, has the vigor of an aneurism. A low whizzing murmur is heard when the stethoscope is applied to the thyroid. The size of the gland is greatest when the paroxysms occur, and it shrinks somewhat in the interval, but it is at all times quite voluminous. The greatest variations in its size take place on the right side; the left side remains pretty constantly enlarged, and the isthmus, which is very prominent, appears to have undergone considerable hyperplasia, and is decidedly firmer than the rest of the organ.

Mrs. R. has suffered from huskiness of the voice, and the vocal register is greatly diminished, so that she is no longer able to sing.

She says her voice has become "weak." She experiences at times also a sense of suffocation, and a constant feeling of weight and uneasiness about the throat. She finds herself becoming fatigued very easily, and she gets out of breath on making any slight exertion. She has no cough nor other pulmonary trouble.

Digestion and Nutrition.—Mrs. R. has a very good appetite, but she suffers from various disorders of digestion. She regurgitates her food at times, and has considerable flatulence and acidity. Her stools are rather light in color, and appear to be deficient in bile. Her urine is high-colored, charged with urates, and rather scanty than excessive. She has lately been losing a little in flesh. Within a year she has observed a change going on in the color of her skin. Large pigment deposits are taking place about the neck and sternal region, and on the hands. The latter are symmetrically placed on the dorsal aspect of the hands, are about two inches in diameter, and are surrounded by abnormally white integument (leucoderma). The skin of these pigmented spots is rough and gives off fine furfuraceous scales.

Progress of the Case.—Recognizing the case as the chronic form of exophthalmic goitre, I commenced at once the treatment by the constant current, using fifteen to thirty elements of Siemens and Halske on alternate days. The applications were made as in the case already detailed. An immediate improvement took place in the paroxysms of palpitation, and in the pulsations in the neck, and the thyroid rapidly diminished in size. The isthmus still remains hard, and is yet prominent, but the rest of the gland appears now, after four months' treatment, to be normal in size and firmness. The expansile movement of the gland has entirely disappeared, and the unpleasant beating of the carotids is no longer felt. The disorders of digestion have almost entirely ceased, and the color of the stools is becoming normal, and she is beginning to gain slowly in weight. There has been no decided change in the abnormal pigmentation. The paroxysms of palpitation are less frequent, and much less severe. She is still under treatment, receiving, however, now but one electrical application each week.

Commentary.—The long existence of these symptoms without the exophthalmos is remarkable, but the other symptoms are eminently characteristic. The strange look about the eyes, although not very definite, must be regarded as the beginning of a change which would finally have eventuated in exophthalmos. M. Dujardin-Beaumetz (*Bulletin Général de Thérapeutique*, tome lxxxvii., p.

521) has recently related a case of this disease in which vitiligo existed, and which he considered a trophic change, referable, of course, to the derangement in the functions of the nervous system. The abnormal pigmentation is an accident, and is not a necessary symptom, and may have some relation to the disturbance of the hepatic function. Various troubles of the nervous system may co-exist with exophthalmic goitre, as also changes in the heart and great vessels, and in the thyroid, but these are complications, and not essential symptoms.

The remarkable change in the goitre under the influence of the galvanic current, is an important fact. The electrolytic treatment of goitre has proved extremely disappointing; occasionally very brilliant results are obtained. It is very probable that in these successful cases the thyroid was enlarged by the dilatation of its vessels, and by effusion of serum into its substance—conditions removable by galvanism; of course, when cystic and calcareous degenerations have taken place in the thyroid, galvanism as well as the other remedial measures will prove futile. In the above case the goitre proved rebellious to a long-continued course of iodine—internally and locally—a fact, in respect to true exophthalmic goitre, which Trousseau has observed, and on which he has commented in his interesting lecture on this topic.

CASE III.—*Very marked Exophthalmos of two Years' Duration; Slight Enlargement of Thyroid; Palpitation and Increased Pulse-rate.*

Personal History.—Mrs. B., a tall fine looking woman of fifty years; married and the mother of four children. She is in humble circumstances, and has suffered social reverses. She is cheerful in disposition, bustling in manner, and quick in all her movements. Her complexion is fair, eyes blue, hair dark brown; her general health has always been good; she is still regularly menstruating, and is free from pelvic disorders of any kind.

Disease History.—After suffering a night of considerable anxiety two years ago, her friends, next day, called her attention to a protrusion of her eyes. On looking into a mirror she was startled to observe that her countenance had a wild staring look, due to an unnatural prominence of her eyes. Previously to this she had noticed that the action of her heart was occasionally rapid, but there had been no enlargement of the thyroid; she had also observed that she was losing flesh, that she had become pale, and

that she was more easily fatigued than formerly; when the protrusion of the eyes occurred, she found that her vision was uncertain, and that in some positions she saw double. She consulted an eminent oculist in Cincinnati, who recognized the difficulty at once, but gave a very discouraging opinion as to the results of treatment.

Status Præsens.—When she presented herself for my opinion I noted the following: Mrs. R. is rather pale and anæmic, but is otherwise in tolerable health. She has a marked degree of exophthalmos. When she looks forward, a rim of dead-white sclerotic appears around the cornea, giving her countenance a weird aspect. When told to look down, the upper lid does not follow the movements of the globe, and a broad band of sclerotic is visible above the cornea. This is more marked in the left than in the right eye. The pupil is about the normal size, and reacts readily to the light. She suffers from occasional dizziness, and has a subjective sense of pulsation in the ears. Her special senses are otherwise normal, and motility and sensibility are entirely unaffected. Her neck is rather full, but it is difficult to say that the thyroid is enlarged. There is no perceptible pulsation in the glands, and the carotids do not beat more energetically than in most persons under the excitement of a medical examination. She has occasional, but not frequent attacks of palpitation. The pulse is soft, but is much more rapid than is normal, and appears to range at about 80 when she is in repose. The area of cardiac dulness is not increased, and there are no murmurs audible over the heart.

Her appetite is not good, her digestion is rather feeble and slow, and her bowels have a tendency to be relaxed. She is still losing flesh, and her appearance is now decidedly anæmic.

The exophthalmos is always increased at the menstrual period.

She was treated with the constant galvanic current in the manner described in the two preceding cases, and in addition had a current from five elements passed through the eyes. The applications were made twice a week for a period of six months, with the result to improve her general health, and to remove entirely the exophthalmos and the palpitations. After several applications the fulness of the neck disappeared for a time, to return again, but it finally ceased altogether, and she has seemed to be entirely well.

Commentary.—This case illustrates the fact that the exophthalmos may be almost the only symptom. It further confirms what is stated by all authorities, that many cases begin with great

abruptness, and that the attacks, frequently, are caused by chagrin or other depressing moral emotions. The less prominence of the cardiac symptoms and the very marked protrusion of the eyes are also notable facts.

Cases corresponding to II. and III. are, of course, not very numerous, but Case I. is a type of a larger number. I do not know that my experience has been exceptional; but it has certainly happened to me to encounter many of this kind, and I must believe that if their nature were rightly interpreted, other physicians would meet them as frequently.

General Remarks.—A disease so interesting at all points as exophthalmic goitre, invites speculation into its origin and nature. My time will not permit me to enter at any length into the consideration of these questions, but some observations as to *the name* by which this disease is known, and as to the *pathology*, may not be inappropriate.

As the cases which I have brought forward, clearly enough indicate, the term exophthalmic goitre is not a correct designation. The exophthalmos may not exist; the thyroid may not enlarge; but the increased action of the heart, to a greater or less extent, appears to be a constant phenomenon. By Graves, this disease was alluded to in connection with palpitation of the heart. Trousseau, believing that Graves was the first to describe it, called it Graves' disease. In Germany it is known as Bosedow's disease, because this observer carefully studied its pathology, and indicated the seat of the morbid alterations on which the symptoms depend. By Virchow it is treated of in connection with "*strumen*," and is entitled *struma exophthalmica*. Lebert invented the barbarous term *tachycardia strumosa*. As no *constant* morbid changes have been observed, and as so many cases are remediable, I think it may be held that this disease is a purely functional disorder, and that the important alterations which in some instances have been studied are accidental.

Thus, M. Fereol communicated to the society of the hospitals the particulars of a case in which, in addition to exophthalmic goitre, there existed symptoms of a spinal sclerosis. (*Bulletin Général de Thérapeutique*, vol. lxxxvii. p. 473.) The changes in the thyroid, *except the dilatation of the vessels*, belong to ordinary goitre, so called.

The anatomical alterations in the ganglia of the sympathetic which have been observed are not found in all cases.

The functional troubles of the heart and of the cervical vessels do not therefore represent appreciable organic lesions. The disease should be named accordingly. Our systematic writers classify the disease differently. As I have already stated, Virchow (*Die krankhaften geschwülste*, dritter band, S. 1) classifies it under the head of "*strumen*," and discusses it in connection with strumous disease of the thyroid, with cretinismus, with strumous disease of the pituitary body and of the supra-renal bodies. This is the pathological standpoint. Clinicians usually regard it from the point of view of the most obvious and constant phenomenon, the hypercinesia of the heart, and class it with cardiac affections; such is the arrangement of Trousseau (*op. cit.*) and of Jaccoud (*Traité de Pathologie Interne*, tome 1re, p. 665) amongst the French, of Niemeyer in Germany (*Am. ed.*), and Flint in our own country.

If we should undertake to assign *exophthalmic goitre* to its true nosological position, according to our present physiological knowledge, it should be placed, as has been done by Eulenburg and Guttmann, amongst the disorders of the sympathetic.

That the motor influence of the heart is in part, and of the vessels both of constriction and of dilatation wholly, derived from the sympathetic, must be admitted as established.

That the pneumogastric is the regulator of cardiac movements, seems equally positively determined. The clinical phenomena of Graves' disease indicate that both sources of nervous supply are disordered—are depressed in function.

At all events, it seems evident that the curative value of the galvanic current is explicable on no other theory.

NOTICE OF THE BIOPLASSON DOCTRINE.

NOTE.

No mention is made, in the following paper, of *Beale's* protoplasmic or bioplasmic theory, as it would necessitate explanations deemed too complicated and out of place. Beale's doctrine is the forerunner of what I believe to be the full truth; it is intermediate between the cell theory and that now presented. On some other occasion I hope to show my appreciation of the merits of Beale as an investigator, a discoverer, and a reasoner, and shall then endeavor to do him historical justice.

I claim no credit for coining the word bioplasson, as the word "plasson" has been proposed and explained by Haeckel, and the prefix "bio" has been used by Beale in connection with the designation *plasma* or *plasm*.

The ideas of humoral and solidistic pathologists long continued to influence medical teachings after Schwann's discoveries of the elementary structure of tissues were generally acknowledged as correct, and more or less consistently applied. It was really not until Virchow promulgated his celebrated lectures on cellular pathology, less than twenty years ago, lectures which reached and deeply impressed the medical profession in every portion of the globe, that the cell doctrine has had undisputed sway.

In Lecture I., delivered February 16, 1858, Virchow said: "If we consider the extraordinary influence which Bichât, in his time, exercised upon the state of medical opinion, it is, indeed, astonishing that such a relatively long period should have elapsed since Schwann made his great discoveries without the real importance of the new facts having been duly appreciated. This has certainly

NOTICE OF THE BIOPLASSON DOCTRINE.

By LOUIS ELSBERG, A.M., M.D.,
PROFESSOR IN THE UNIVERSITY OF THE CITY OF NEW YORK.

On the 17th of April, and the 23d of May, 1873, Dr. Carl Heitzmann presented to the Imperial Academy of Sciences, at Vienna, the account of some investigations of the structure of protoplasma and its relation to matrix substance in the animal body, which form the groundwork of a biological doctrine destined, perhaps at no distant time, to take the place of the cell doctrine. Not only in the wide domain of organic physiology, but especially also in human pathology, the cell doctrine has been accepted so universally that it seems to me eminently proper to bring the new views to the notice of the American Medical Association, even at this early stage of their crystallization into a complete doctrine. All that I shall present to you as histological fact has been repeatedly observed and demonstrated by Dr. Heitzmann, both at Vienna and at New York; and a number of others, as well as I, have been enabled to confirm his observations.

The ideas of humoral and solidistic pathologists long continued to influence medical teachings after Schwann's discoveries of the elementary structure of tissues were generally acknowledged as correct, and more or less consistently applied. It was really not until Virchow promulgated his celebrated lectures on cellular pathology, less than twenty years ago, lectures which reached and deeply impressed the medical profession in every portion of the globe, that the cell doctrine has had undisputed sway.

In Lecture I., delivered February 16, 1858, Virchow said: "If we consider the extraordinary influence which Bichât, in his time, exercised upon the state of medical opinion, it is, indeed, astonishing that such a relatively long period should have elapsed since Schwann made his great discoveries without the real importance of the new facts having been duly appreciated. This has certainly

been essentially due to the great incompleteness of our knowledge with regard to the intimate structure of our tissues which has continued to exist until quite recently, and, as we are sorry to be obliged to confess, still even now prevails with regard to many points of histology to such a degree that we scarcely know in favor of what view to decide. Especial difficulty has been found in answering the question from what parts of the body action really proceeds, what parts are active, what passive; and yet it is already quite possible to come to a definite conclusion upon this point, even in the case of parts the structure of which is still disputed. The chief point in this application of histology to pathology is to obtain a recognition of the fact that the cell is really the ultimate morphological element in which there is any manifestation of life, and that we must not transfer the seat of real action to any point beyond the cell." And further on he said: "According to my ideas, this is the only possible starting-point of all biological doctrines. If a definite correspondence in elementary form pervades the whole series of all living things, and if in this series something else which might be placed in the stead of the cell be in vain sought for, then must every more highly developed organism, whether vegetable or animal, necessarily, above all, be regarded as a progressive total, made up of a larger or smaller number of similar or dissimilar cells. Just as a tree constitutes a mass arranged in a definite manner, in which, in every single part, in the leaves as in the root, in the trunk as in the blossom, cells are discovered to be the ultimate elements, so it is also with the forms of animal life. *Every animal presents itself as a sum of vital unities*, every one of which manifests all the characteristics of life. The characteristics and unity of life cannot be limited to any one particular spot in a highly developed organism (for example, to the brain of man), but are to be found only in the definite, constantly recurring structure, which every individual element displays. Hence it follows that the structural composition of a body of considerable size, a so-called individual, always represents a kind of social arrangement of parts, an arrangement of a social kind, in which a number of individual existences are mutually dependent, but in such a way that every element has its own special action, and, even though it derive its stimulus to activity from other parts, yet alone effects the actual performance of its duties. I have therefore considered it necessary, and I believe you will derive benefit from the conception, to portion out the body into

cell-territories (Zellenterritorien). I say territories, because we find in the organization of animals a peculiarity which in vegetables is scarcely at all to be witnessed, namely, the development of large masses of so-called *intercellular substance*. Whilst vegetable cells are usually in immediate contact with one another by their external secreted layers, although in such a manner that the old boundaries can still always be distinguished, we find in animal tissues that this species of arrangement is the more rare one. In the often very abundant mass of matter which lies between the cells (*intermediate, intercellular substance*), we are seldom able to perceive at a glance how far a given part of it belongs to one or another cell; it presents the aspect of a homogeneous intermediate substance. According to Schwann, the intercellular substance was the cytoblastema, destined for the development of new cells. This I do not consider to be correct, but, on the contrary, I have, by means of a series of pathological observations, arrived at the conclusion that the intercellular substance is dependent in a certain definite manner upon the cells, and that it is necessary to draw boundaries in it also, so that certain districts belong to one cell, and certain others to another. You will see how sharply these boundaries are defined by pathological processes, and how direct evidence is afforded, that any given district of intercellular substance is ruled over by the cell which lies in the middle of it, and exercises influence upon the neighboring parts.

"It must now be evident to you, I think, what I understand by the territories of cells. But there are simple tissues which are composed entirely of cells, cell lying close to cell. In these there can be no difficulty with regard to the boundaries of the individual cells, yet it is necessary that I should call your attention to the fact that, in this case, too, every individual cell may run its own peculiar course, may undergo its own peculiar changes, without the fate of the cell lying next to it being necessarily linked with its own. In other tissues, on the contrary, in which we find intermediate substance, every cell, in addition to its own contents, has the superintendence of a certain quantity of matter external to it, and this shares in its changes, nay, is frequently affected even earlier than the interior of the cell, which is rendered more secure by its situation than the external intercellular matter.

"Finally, there is a third series of tissues, in which the elements are more intimately connected with one another. A stellate cell, for example, may anastomose with a similar one, and in this way

a reticular arrangement may be produced, similar to that which we see in capillary vessels and other analogous structures. In this case it might be supposed that the whole series was ruled by something which lay, who knows how far off; but upon more accurate investigation, it turns out that even in this chainwork of cells a certain independence of the individual members prevails, and that this independence evinces itself by single cells undergoing, in consequence of certain external or internal influences, certain changes confined to their own limits, and not necessarily participated in by the cells immediately adjoining."[1]

Now, according to Heitzmann, what Virchow asserts of "a third series of tissues" is really true of all tissues. According to Heitzmann, not only are there contained no "cells" as isolated individuals in any tissue of the body, but no tissue in the body is isolated from the others. He prefers not to use the term "cells;" he speaks of "living matter," and this he asserts is continuous throughout the whole body. If we desire to retain the use of the word cell to designate the living tissue-elements, we must regard each cell to contain a network of living matter within it, and every cell connected by threads of living matter with every other cell in its neighborhood; so that, to use Heitzmann's words: "The animal body as a whole is a connected mass of protoplasma in which, in some part, are embedded isolated protoplasma-corpuscles (wandering corpuscles, colorless and red blood-corpuscles), and various not-living substances (glue-giving and mucin-containing substances in the widest sense, also fat, pigment granules, etc.)."[2]

In contradistinction to the cell-doctrine, this might be termed the protoplasma doctrine; but as the word protoplasma is etymologically incorrect for designating living and formative matter, as it has already been used by some authors with a meaning other than the simple one here intended, and as it has not yet become so common that its retention or rejection is a matter of much consequence, I propose the designation bioplasson doctrine.[3]

[1] Cellular Pathology as based upon Physiological and Pathological Histology. By Rudolf Virchow. Translated from the 2d edition by Frank Chance, B.A., M.B. Cantab. etc. New York: Robert M. Devitt, pp. 29, 40, *et seq.*

[2] Untersuchungen über das Protoplasma. Von C. Heitzmann. Sitzungsbericht de K. Akad. der Wissenschaften. Band. lxvii. Abth. iii. Mai-Heft, 1873, p. 15.

[3] The word plasma (τὸ πλάσμα) really means the *formed*, that which is formed, and plasson (τὸ πλάσσων) the *forming*, that which forms or does the forming. The distinction is the one so justly insisted upon by Beale in his discrimination between *germinal* or *living matter* and *formed material*. The term plasma may, per-

If the lowest form of animal life, a so-called amœba, be examined with high magnifying power, a power of say 800 or 1000 diameters, it is seen to contain a network of threads crossing each other at various angles, the points of intersection being thickened into granules. During locomotion a protrusion is projected in which the network, sometimes at first plainly visible, becomes more and more fine until it seems to disappear; at the same time in the interior the threads can be seen to have shortened, and the granules to have come nearer together and to have enlarged; then the granules seem to flow toward or into the protrusion, the network is again plainly visible through the whole body, and locomotion is accomplished. Frequently vacuoles are seen; sometimes a granule is floating in a vacuole, and occasionally such a granule seems to send out threads which, when they touch the edges of the vacuole, cause the vacuole to disappear abruptly, whereupon the network

haps, be appropriately applied to the material formed from the fluid of living matter, the intermediate or intercellular substance of authors; but the term plasson only can be applied to active, living, forming matter. Proto (πρωτος) is a prefix signifying first, primary, primordial; and protoplasma has been used by some to denote the original or first-formed organic matter. But the term we are in need of for our biological doctrine is one that shall be an expression for living formative matter in its simple elementary form; and for this purpose, it seems to me, bioplasson may appropriately be chosen. We must agree to denote by it not living matter in general, but specifically only the elementary form of living matter; and only this living matter, as such, *i. e.* while it is alive. On the last point I may quote a paragraph from an introductory lecture entitled "The Protoplasm Theory," delivered at the College of Physicians and Surgeons, New York, Oct. 1, 1873, by Prof. Edward Curtis. I quote *verbatim* except that I put the word bioplasson for the word protoplasm wherever it occurs in the paragraph.

"But here allow me a word to save you from possible confusion of thought. Observe that the term 'bioplasson' is applied only to the *living matter as such*, while possessed of the physical and vital characteristics peculiar to its condition; it is *not* the name of the albuminoid compound or compounds into which chemical analysis can resolve the living mass. The two conceptions are distinct, and are to each other as those of diamond and carbon. Diamond is wholly composed of carbon; yet while *carbon* is the chemical element wherever and however occurring, alone or in combination, *diamond* is the distinct thing—the gem-substance, as such, characterized by peculiar lustre, transparency, hardness, and planes of cleavage. Disturb the crystalline condition that determines these physical attributes of the mineral, as by heating diamond, protected from the air, between the poles of a powerful battery, and though its chemical composition is unchanged, yet the dull black mass into which the glittering jewel is transformed is, it is needless to say, no longer diamond. In other words, *diamond* is the mineralogist's name for the crystalline gem, and *carbon* the chemical designation of the matter that composes it. So with *bioplasson;* the word belongs not to the chemist as meaning a product of analysis, but to the biologist as the name of a living thing."

is again seen. The living amœba consists of two constituents, a semi-solid, which is living matter, and a fluid which is not living. (See Fig. I.)

Let us with a similar high magnifying power examine a drop of blood, taken say from our thumb, upon the heated stage. At the ordinary temperature of the room, the shining colorless blood-corpuscles show no structure. When the temperature is gradually raised to 86° F. the following is seen. In the centre of the corpuscle one or two dull grayish, opaque homogeneous little bodies appear. From each of these radiate conical spokes passing into a net-work which extends through the whole corpuscle, and the nodal points of which appear thickened or as granules. At the periphery of the corpuscle the network seems closed by a continuous dull shining layer. The central body, spokes, threads, and granules seem optically similar; the meshes appear as light structureless spaces. While the temperature gradually rises to 95° F., changes of form occur continually, in the central body, as well as in the meshwork of the corpuscle, and in the latter itself. The central body is changed in varying places into a meshwork; in the rest of the corpuscle there appear and disappear groups of larger granules with no, or very small, meshes. The groups change shapes, new ones take their places, and this play continues, even if the temperature falls again. When the temperature had fallen to about 74° F., there appeared in a colorless blood-corpuscle a vacuole, in which a loose granule executed slight pendulous movements. The granule was observed to change its form and to project from time to time thin threads, which disappeared again: once it seemed as though three particularly long threads were seen to reach to the wall of the vacuole—suddenly the vacuole disappeared. Afterward a new vacuole arose at almost the same place, also containing a granule; but this vacuole became biscuit-shaped and enlarged by the breaking down of the partition wall of a neighboring vacuole. The whole blood-corpuscle gradually became full of vacuoles, though it still sluggishly changed its form. (See Fig. II.)

While the temperature was being raised (before reaching 86° F.), there frequently appeared in a blood-corpuscle a small, dark colored vesicular nucleus, containing one or two nucleoli. Such nuclei would sometimes appear at several points of the corpuscle while the temperature was rising. Heitzmann says they would originate under his eyes out of dull, grayish, compact bodies devoid of dark contour. In addition to larger dark-contoured nuclei—as many as

four—a varying number of smaller ones were several times seen. The nucleoli of such dark-contoured nuclei have attached to them fine radiating spokes extending to the periphery of the nuclei; this is surrounded by a light seam through which go a number of spokes connecting with a network extending through the whole corpuscle. Blood-corpuscles with such nuclei did not materially change their form even when the temperature rose to 95° F.; only occasionally a hyaline protrusion appeared at the periphery, which gradually enlarged, but showed no structure, except that sometimes very small vacuoles were recognized in such a protrusion, which seemed to be bounded by a more dense, slightly shining substance.

Hyaline cartilage has hitherto been looked upon as showing characteristically, corpuscles or so-called "cartilage-*cells*" imbedded in a homogeneous matrix or intercellular substance. But, if a prepared section of hyaline cartilage (taken, for instance, from the condyle of the femur of a middling large rabbit immediately after death, and moistened with a solution of salt, 1 part to 200 parts of water, or with serum of the blood) be examined with high magnifying power, many of the corpuscles show a structure entirely similar to that just described as exhibited by the colorless blood-corpuscles of man. If the nucleus of the cartilage-corpuscle be visible, it appears either homogeneous or composed of a dense meshwork of living matter. From its periphery proceed fine conical thorns which lead to a meshwork pervading the whole corpuscle, the threads of which form, at the points of intersection, thickenings, granules, or small clumps of living matter. In the lighter-looking narrow seam, existing between the corpuscles and the surrounding matrix, we may also recognize fine threads which go from the periphery of the corpuscle and are lost to the view in the matrix. On examining such a fresh preparation upon the heated stage, we recognize, at a temperature of from 86° to 95° F., a continual but very slow change in the living matter of those cartilage-corpuscles which distinctly show the network: the points of intersection of threads move nearer together or go further apart, sometimes a few granules lying close to each other unite into one little lump, so that the threads between them disappear, then the latter reappear, lengthen and shorten; and this change in the form of the interior network continues for some little time, and without any perceptible influence upon the form of the corpuscle as a whole.

Careful examination of the matrix reveals throughout its whole extent the existence of a very delicate, more or less distinct network of living matter; and in many instances the connection of the threads proceeding from the corpuscles with this delicate network can be traced.

To show the structure of both the cartilage-corpuscles and the matrix still more plainly, we may resort to the method of tinction of preparations by nitrate of silver and chloride of gold, as well as the examination of cartilage during normal calcification, and in its inflamed conditions.

It is well known that chloride of gold stains living matter dark violet, while nitrate of silver acts upon the matrix, and, by darkening it, makes the living matter appear of a light color or colorless. The appearances obtained thus complement each other; and the network proceeding from the corpuscles and ramifying all through the matrix, is seen, with the same magnifying power, as constituted by violet threads and granules in the first case, and by white processes or empty spaces in the second case. (See Figs. III. and IV.) As the deposition of lime salts takes place only in the matrix, the living matter itself remaining free, careful examination during such depositions, especially in cases of artificially produced inflammation, also brings to view the fine network of living matter traversing the matrix.

Observations analogous to those of the living matter of cartilage have been made in regard to every tissue in the body. Thus, for instance, on examining smooth muscular fibres, fresh or in preparations treated with chloride of gold, we can convince ourselves that from each spindle-shaped body a number of thorns proceed which traverse the surrounding cement-substance and communicate with thorns of neighboring spindle-shaped bodies. Whenever the oblong nuclei are visible, fine spokes are also seen to radiate from them into the surrounding network of living matter. So, also, does the examination of striated muscle demonstrate the same disposition of the living matter. Heitzmann has shown the correctness of the observation published by E. Brücke,[1] "that the sarcous elements do not exist in the living muscle as permanent unchangeable masses, but are groups of molecules which during death, as it were, arrange themselves into variously formed columns:"—"I

[1] Untersuchungen über den Bau der Muskelfasern mit Hülfe des polar. Lichtes. Denkschrift der Wiener Akad. d. Wissensch. Bd. xv., p. 76.

can recognize," says Heitzmann,[1] "in living striped muscle nothing else than in living protoplasm in general, namely, granules and heaps of living matter formed by granules—sarcous elements—and between these a non-contractile intermediate substance." Each granule and each sarcous element can be seen to be connected with its neighbors in all directions by means of fine, grayish threads, which traverse the intermediate substance in both vertical and transverse directions. (See Fig. VI.) And wherever muscle corpuscles, the so-called "muscle-cells," are seen, delicate conical spokes can be made out proceeding from the periphery of each of these, passing through the narrow light seam around the corpuscle, and communicating with the neighboring sarcous elements. The connections here described can, of course, be seen more plainly in preparations stained with chloride of gold.

Nerve tissue shows the same things, viz., granules and larger accumulations of living matter connected by innumerable delicate threads. The spokes or thorns within the ganglion corpuscles had been described by a large number of previous observers,[2] but they had been looked upon partly as belonging to the structure of the corpuscle and partly as coagulation products. They are no more and no less than the connecting threads which occur in cartilage corpuscles, and, in fact, in all living matter. Fine threads can also be seen coming from the periphery of the ganglion corpuscles, and also from all nerve fibres into the surrounding light seam.

As to epithelial tissue, Max Schultze has described what he called "thorned cells" (*Stachel und Riffzellen*) more than ten years ago as a normal occurrence in pavement epithelium of the skin, lips, of the oral and lingual mucous membrane, and of the conjunctiva palpebrarum.[3] The thorns are fine processes from an epithelium element, which traverse the light seam of the cement substance to reach neighboring elements. The thorns are conical, and two coming from neighboring elements meet with their points, or sometimes in the cement substance. (See Fig. V.) Careful treatment by nitrate of silver reveals fine light interruption in the dark brown cement substance corresponding to these thorns, while gold tinction shows a number of violet threads passing through the un-

[1] Sitzungsbericht der k. Akad. der Wissensch. iii. Abth. Mai-Heft, 1873. Bd. lxvii., p. 12.

[2] See Julius Arnold, Ein Beitrag zu der feineren Structur der Ganglienzellen. Virchow's Archiv, Bd. 41, 1867.

[3] Centralblatt f. d. mediz. Wissenschaften, 1864.

colored cement substance corresponding to the same. Neither in any epithelial nor in glandular tissue, nor, in fact, in any other tissue, are there elements that could not be called with Max Schultze "thorned cells," for from the corpuscles, from the nuclei, and from the nucleoli, there proceed thorns or threads connecting the neighboring portions of living matter. Careful investigation further shows that, not only the elements of a particular tissue are thus connected by threads of living matter, but that such fine threads pass also from one tissue to another.

And, gentlemen, allow me to impress this fact upon you, that these are things which each and every one of you can see for himself if he only has a good microscope, good eyes, and an *unprejudiced mind.* Don't look for any so-called "cells," and don't imagine, as I used to do, that it is given to only a favored few to be able to penetrate these mysteries of nature. The only danger is that you become so much fascinated with histological investigations as to neglect other important things. During the last six months I was every afternoon, when I was at home, from three to four hours at the microscope.

It is the merit of Heitzmann to have discovered, in the first place, that the living matter in its simple form, as seen in an amœba, the so-called basis matter of life, to which hitherto the name of protoplasma has been applied, but which I propose to designate as bioplasson, is not without structure, as has, before his accurate investigations, been supposed, and that its structure is that of a network, in the meshes of which the bioplasson fluid or the not contractile, not living, portion of the organism exists. He discovered that the granules, which had been observed before, are not foreign nor accidental occurrences, but that they are part and parcel of the living matter, that, in fact, they are the thickened points of intersection of the threads of bioplasson constituting the living network. Extending his investigations, he found that what was true of the structure of bioplasson in the amœba, where a single unit-mass of living matter constitutes the entire individual, is true also of the structure of bioplasson of all, even the highest, living organisms. The idea connected with the word *cell,* when this term was first applied to the organic form element, had, with the advance of microscopical and histological knowledge, gradually undergone such changes that the name had become a complete misnomer. Although "cells" were still spoken of, it was understood that their essential constituent was living matter individual-

ized into small distinct masses. The existence in these of a nucleus, a nucleolus, even a nucleolinus and granules was known; even thorns and processes had been observed occasionally. But all this knowledge of the structure of these elementary masses was fragmentary until Heitzmann announced that the nuclus, nucleolus, granules, and threads, are really the living contractile matter; that it is arranged in a network containing in its meshes the non-contractile matter which is transformed into the various kinds of matrix characterizing different tissues; and that the tissue unit-masses of bioplasson throughout the whole body are interconnected with fine threads of the same living matter.

Of the significance of these discoveries of Heitzmann, and of their bearing upon the question of physiology and pathology, I can here say but a few words. The more our knowledge of the minute anatomy, or rather morphology, of the organism advances, the more explicable becomes the functional activity of the various parts and tissues. So long as the "cell" was looked upon as the simplest form element of the body, we could not hope to go beyond the "cells" and their performances in health and disease. Unfortunately their investigation could not explain essential vital phenomena, the real activity of living matter. To-day we have it in our power to examine almost all tissues of the animal body while they are alive, by preventing, in thin sections placed under the microscope, evaporation or drying up on the one hand, and by supplying, on the other, such artificial temperature and other conditions as are necessary for the vital manifestation of the particular tissue under investigation. And, enabled directly to observe the phenomena which accompany movement of living matter, its contraction, we may hope to attain clear conceptions of the mysterious activity of muscles, of nerves, even of epithelia which form secretory organs. I may instance Heitzmann's discovery of the manner in which primary muscle bundles are constituted, as showing how easy it is to understand the observed phenomena of muscular contraction and innervation, if we have correct information as to the morphological arrangement. (See Fig. VI.) Without going into the details, I may say that a primary bundle is made up of rows of sarcous elements and muscle fluid, the former united by threads of living matter, as mentioned before. *Contraction of the whole muscle consists in this: that the sarcous elements become larger and the threads shorter.* Kühne has shown that the motor nerve does not enter the muscle fibre, but ends knob-like at its side in about

the middle; here the contraction commences and proceeds toward each end. In fact, we find everywhere that definite physiological functions depend upon definite morphological arrangements, and we may well make deductions from the latter as to the former.

Pathology will doubtless derive much advantage from the bioplasson doctrine. We are enabled to observe quantitative and qualitative changes of living matter in the smallest constituents of the body. We know that the disposition of living matter is different in different persons, and that in the case of increased supply of food the reaction is different in strong and healthy people on the one hand, and the sick and weak on the other. Indeed, upon this knowledge rests, to-day, the whole doctrine of tuberculosis. It may be that we shall yet learn to know the differences in the behavior of living matter toward different reagents, or differences in its quantitative arrangement, so that we may, perhaps, become able, from the examination of a few colorless blood-corpuscles, to gain an insight into the condition and vital power of the whole individual. If this come to pass, it will be possible to recognize certain diseases, by means of the microscope, before they are sufficiently developed to do much harm; and we may thus come a step nearer to the highest aim of the physician—the prevention of disease. At all events, every exact scientific investigation, even though at first of theoretical value only, sooner or later brings with it some practical benefit.

Pl. I.

Accompanying Dr. Elsberg's "Notice of the Bioplasson Doctrine".

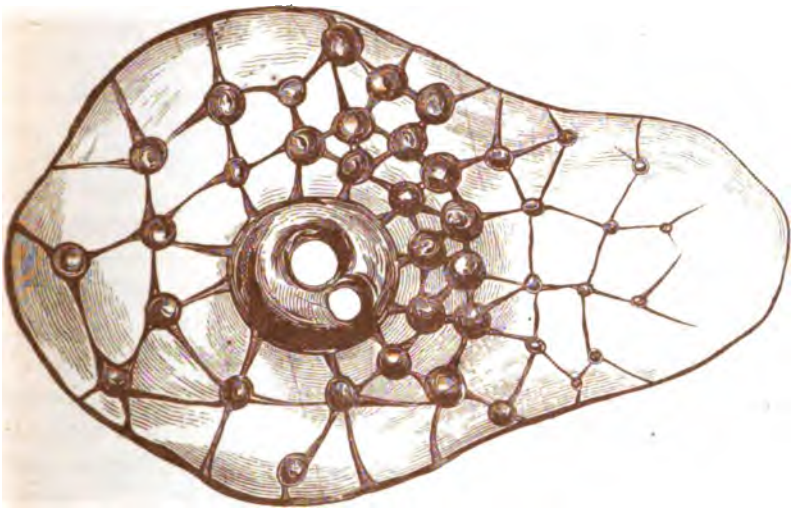


Fig. 1 CREEPING AMOEBA.

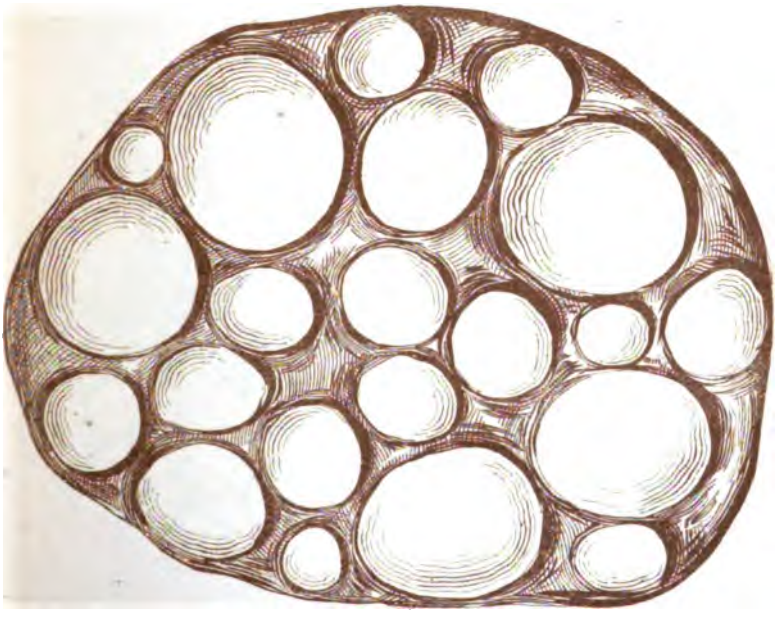


Fig. 2. VACUOLIZED COLORLESS BLOOD CORPUSCLE

Pl. II

Accompanying Dr. Elsberg's "Notice of the Bioplasson Doctrine"

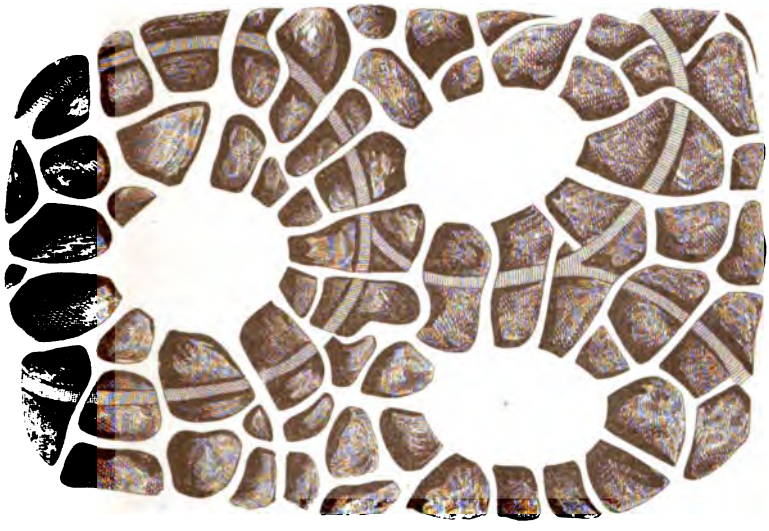


Fig. 3 CARTILAGE STAINED WITH NITRATE OF SILVER.

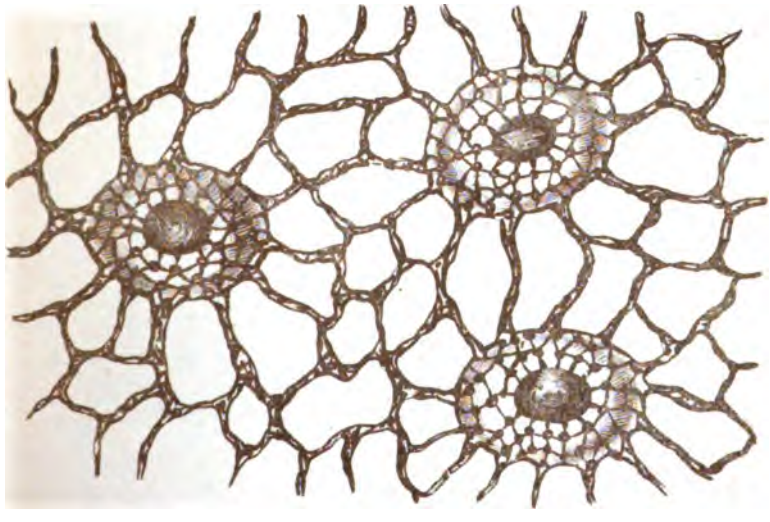


Fig. 4. CARTILAGE STAINED WITH CHLORIDE OF GOLD.

Pl III.

Accompanying Dr Elsberg's "Notice of the Bioplasson Doctrine"

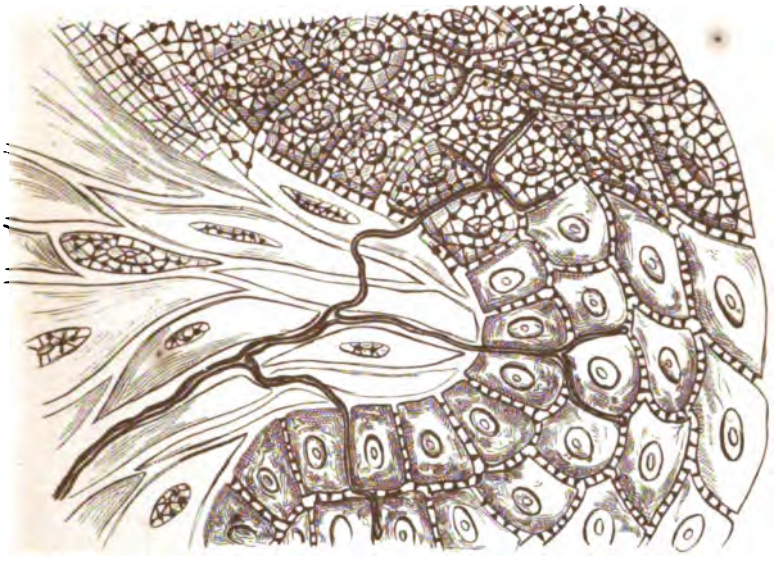


Fig 5. RETE MUCOSUM AND PAPILLA OF THE SKIN.

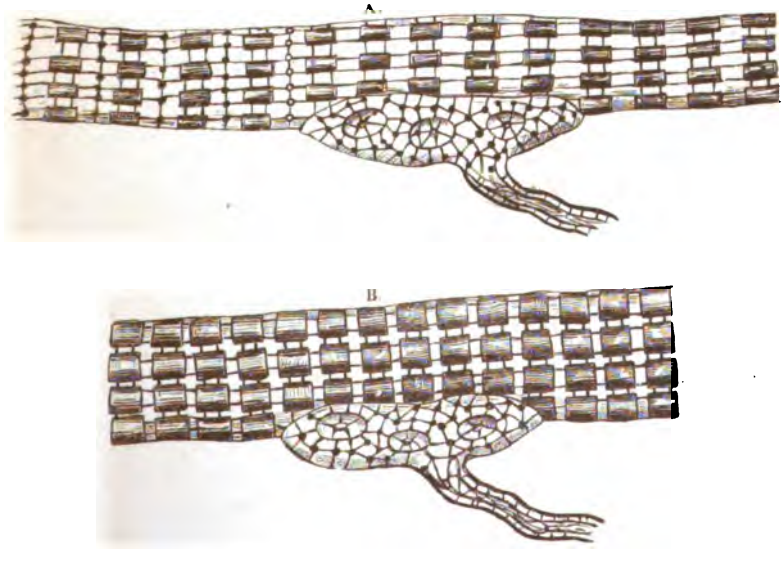


Fig 6. STRIPED MUSCLE-FIBER AT REST (A.) AND IN CONTRACTION (B.)

MINUTES OF THE SECTION

ON

OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

MINUTES OF THE SECTION

ON

OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

TUESDAY, May 4, 1875.

Dr. W. H. BYFORD, of Illinois, presiding.

Dr. M. P. WRIGHT, of Ohio, presented the cadaver of an infant, the last of a series of cases, which had occurred in his service in the obstetrical wards of the Cincinnati General Hospital, during the past two years. He denominated the disease "black color" or "pigmentation," and desired information in regard to its nature and treatment, stating that he had searched in vain for the reports of any similar cases. He exhibited a dissection of the kidneys.

Dr. CHADWICK, of Massachusetts, called attention to the fact that similar cases had occurred in the obstetrical wards of the Massachusetts General Hospital, a report of which might be found in a recent number of the *Boston Medical and Surgical Journal.*

Dr. Wright was requested to furnish a full report, in writing, of his cases for reference to the Committee of Publication.

Dr. S. C. BUSEY, of D. C., presented a paper entitled *Congenital Occlusion and Dilatation of Lymphatic Channels*, which was referred to the Committee of Publication.

Dr. NATHAN ALLEN, of Massachusetts, read a paper entitled *Normal Standard of Women for Propagation*, which was referred to the Committee of Publication.

WEDNESDAY, May 5.

Dr. W. H. BYFORD presiding.

The Chairman called attention to the provision of the regulations, which required the submission of all papers read before the Section to a special committee for careful examination, and, on motion of Dr. CHADWICK, the motion referring the papers read the day previously was reconsidered, and the papers were referred to a special committee consisting of Drs. BYFORD, PARVIN, JENKS, CHADWICK, and the Secretary.

MINUTES OF THE SECTION

ON

OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

TUESDAY, May 4, 1875.

Dr. W. H. BYFORD, of Illinois, presiding.

Dr. M. P. WRIGHT, of Ohio, presented the cadaver of an infant, the last of a series of cases, which had occurred in his service in the obstetrical wards of the Cincinnati General Hospital, during the past two years. He denominated the disease "black color" or "pigmentation," and desired information in regard to its nature and treatment, stating that he had searched in vain for the reports of any similar cases. He exhibited a dissection of the kidneys.

Dr. CHADWICK, of Massachusetts, called attention to the fact that similar cases had occurred in the obstetrical wards of the Massachusetts General Hospital, a report of which might be found in a recent number of the *Boston Medical and Surgical Journal.*

Dr. Wright was requested to furnish a full report, in writing, of his cases for reference to the Committee of Publication.

Dr. S. C. BUSEY, of D. C., presented a paper entitled *Congenital Occlusion and Dilatation of Lymphatic Channels*, which was referred to the Committee of Publication.

Dr. NATHAN ALLEN, of Massachusetts, read a paper entitled *Normal Standard of Women for Propagation*, which was referred to the Committee of Publication.

WEDNESDAY, May 5.

Dr. W. H. BYFORD presiding.

The Chairman called attention to the provision of the regulations, which required the submission of all papers read before the Section to a special committee for careful examination, and, on motion of Dr. CHADWICK, the motion referring the papers read the day previously was reconsidered, and the papers were referred to a special committee consisting of Drs. BYFORD, PARVIN, JENKS, CHADWICK, and the Secretary.

The Section refused to permit Dr. SELL to read his paper entitled *Obstetrics in Vienna*, because the greater portion of it had been published in a journal.

Dr. JOHN MORRIS, of Maryland, submitted his report on *Pessaries*, which was read and referred to the Special Committee for examination.

THURSDAY, May 6.

Section met at 3 P. M., Dr. BYFORD presiding.

Dr. WARNER, of Massachusetts, asked permission to withdraw his paper entitled *The Connection of the Hepatic Functions with Uterine Hyperæmia, Fluxion, and Inflammation*, and to have leave to present it at the next meeting. Permission granted.

The address of the Chairman was referred to the Committee of Publication, with the recommendation that it be published in the Transactions.

On motion of Dr. CHADWICK the Section tendered its thanks to Dr. BYFORD for his very able and interesting address.

The report of Dr. A. S. HEATON, of Michigan, *On Retroversion of the Uterus during Pregnancy*, was read and referred to the Special Committee for examination.

The paper by Dr. J. H. THOMPSON, of D. C., entitled *Three Cases of Myo-Fibromata or Fibroid Tumors of the Uterus treated by Ergot*, was read and referred to the Special Committee.

The paper by Dr. JOSHUA P. ALLEN, of Philadelphia, entitled *Phlebitis following the Hypodermic Use of Ergot in the Treatment of a Fibroid Tumor of the Uterus*, was referred to the Special Committee for examination.

On motion of Dr. T. PARVIN, of Indiana, the Chairman and Secretary of this Section for the ensuing year were directed to solicit contributions of papers to be submitted at the meeting to be held in 1876.

A vote of thanks was tendered to the officers of the Section.

The Secretary regrets that, in consequence of the failure to obtain a competent reporter for this Section, he cannot submit to the Publication Committee a synopsis of the instructive and interesting debates which took place during the sessions.

S. C. BUSEY, M.D.,
Secretary.

W. H. BYFORD, M.D.,
Chairman.

ADDRESS IN OBSTETRICS, DISEASES OF WOMEN AND CHILDREN.

By WM. H. BYFORD, A.M., M.D.

Mr. President and Gentlemen: The great extent, varied character, and rapid advancement of the subjects connected with the department of practical medicine represented by the Section of Obstetrics and Diseases of Women and Children render a complete and profitable annual *resumé* of progress a very difficult if not an impracticable undertaking in the time allotted to this address. I hope, therefore, to be pardoned for selecting some one subject for more extended consideration and research than could be embraced in so short a general summary. This course will, I believe, permit of an accumulation of facts from which important inferences may be drawn that will serve as a basis for the formation of rules to guide us in the practice of our art.

This brief introduction will enable me, without further apology or loss of time, to invite your attention to the Treatment of Fibrous Tumors of the Uterus by Ergot, the subject which I have chosen for my address.

It is a very short time since all forms of fibrous tumors of the uterus, except the polypoid variety, were considered entirely beyond the reach of legitimate medicine or surgery. Recent writers, with very few exceptions, teach the entire inefficiency of any form of treatment for the cure of intramural fibrous tumors of the uterus except by enucleation, and that this operation is so dangerous and difficult as not to be thought of except in desperate conditions. All who have been under the necessity of performing this hazardous operation will readily concur with the teachers in the cautionary precept that this must be a last resort of surgery, instead of a chosen means of relief.

To the advantage of the medicinal treatment of these tumors we may justly say, that it is not a final venture, but a safe means,

which can be employed before dangerous symptoms present themselves, and thus save patients from the inconveniences and perils of a resort to surgery. Even in extremities, we are encouraged to hope and believe that the dangerous symptoms which have hitherto been considered as calling for surgical interference may be removed, so that we can wait in safety for the further and more curative effects of the same remedies. On account of the safety of this treatment, all cases, both trivial and grave, will be included in the field of its usefulness.

Experimental therapeutics has taught us that ergot and some other medicines exert a special influence on the unstriped muscular fibres. This property is not confined to ergot and belladonna, the popular medicines now used for this purpose. It is also possessed by quinia, some preparations of lead, alum, bromine, and iodine in a high degree, and by most of the astringents.

Remembering the double system of unstriped fibres entering into the composition of the uterine tissues, we can easily understand how much more efficiently these agents may be made to act upon the uterus than upon any other organ. While the unstriped fibres form the muscular structure of the walls of the uterus they also enter into the composition of the arterial tubes supplying blood to its substance.

Both ergot and belladonna act upon the uterine walls in a threefold manner, and cause a diminution in the flow of blood to the morbid as well as to the healthy tissues in the uterine structure. First: the calibre of the arterial tubes is diminished by the contraction of the muscular fibres which enter into their composition. Second: the arterioles are diminished in size by compression from the contraction of the uterine muscular fibres which surround them. Third: these vessels are distorted and drawn in diverse directions by both the contraction and compression, and hence are rendered less fit for sanguineous conduits.

Another consideration of prime importance is that, under the influence of these medicines, the nutrition of fibrous tumors is interfered with, not only from diminution of blood in their tissues, but also from compression of their substance by the proper fibres of the uterus, and are therefore made more susceptible to the process of disintegration and absorption.

If we are correct in the histology and pathology of the parts in question, and in the therapeutical action of ergot and the other medicines mentioned, then we have just grounds upon which to

base hopeful curative means for the removal of morbid growths of the uterus. And I think the published observations of the enthusiastic laborers who have entered upon record their results in treating these tumors with ergot give us much reason to hope that fibrous tumors of the uterus can be cured by the use of medicine alone. One great difficulty that besets the introduction of any new method of treating disease, and which is now operating adversely to the introduction of this new process of cure, is that we expect too much. The great success of Hildebrandt has exceeded that obtained by most of his followers, and these latter, becoming disheartened by their early failures, are likely, many of them, to reject the whole as a plausible mistake. A more temperate expectation would enable us to secure reasonable results. It is quite probable that only partial benefit will accrue in the majority of instances.

As is well known, many multinuclear tumors become dense as cartilage, while some of them, through processes of degeneration still more complex, are transformed into masses of earthy matter. These of course can no more be absorbed than the chalky deposits of gout. Neither have they vitality enough in them to permit of any disorganizing influence from pressure; and there is so little blood circulating through them that their nutrition cannot be affected by the action of ergot or belladonna on their arterial tubes. Then, again, in tumors with multinuclear centres of origin, the fibrous structure of the uterus is sometimes so completely replaced by the multitude of morbid growths that its power of contraction is almost destroyed. While, on the other hand, tumors with but a single nucleus are generally associated with a very vascular condition of the uterus, and the muscular fibres are hypertrophied much as they are in pregnancy. These are the most rapidly growing and most mischievous tumors; they are also the most easily affected by ergot.

Between these extremes we may expect a great variety of results in treatment. The degeneration in the more vascular forms of the tumor under the influence of ergot is probably similar to the process of involution of the uterus after parturition. As the circulation is diminished in quantity and retarded in motion, the vitality of the tumor is lowered until fatty metamorphosis is fully effected. The substance of the tumor and the hypertrophied fibres of the uterus are thus at the same time converted into material most easily absorbed.

Those who have observed many cases of ergotism in the uterus containing these tumors must have noticed another more summary influence occasionally exerted upon them; viz., their expulsion through the mouth of the uterus into the vagina with inversion more or less complete. Not alone are the polypoids thus driven down from the uterine cavity and their immediate detachment effected, or strangulation and gangrene brought about, but the tumors situated within the walls of the uterus are also expelled.

If the tumor is situated much nearer to the mucous than to the serous surface of the uterus, this is very likely to take place under protracted uterine contraction. Two remarkable cases of this kind have fallen under my observation within the last few years.

One occurred in April, 1870, and was enucleated, before the class of the Chicago Medical College and in the presence of several of my colleagues. The uterus was inverted and was replaced without any difficulty after the tumor was removed. In this case the form of ergot used was the fluid extract, and it was administered internally in half drachm doses. It was taken continuously for almost three weeks, and caused a great amount of suffering from the pain of contraction. The pulse was accelerated and the uterine globe very tender to the touch for several days before the expulsion of the tumor.

The other case occurred a few months since. The expulsion was produced under the influence of ergot administered hypodermically and by the mouth. The medicine was administered in both of these ways for about a month by my son, Dr. H. T. Byford. While in the agony of expulsion, the patient, who resided some distance from us in another part of the city, sent for a physician in her neighborhood. That gentleman discovered the tumor partially expelled, encouraged the process by traction, and amputated the protruding mass with the galvano-caustic wire. The uterus I understand is at the time of this writing still inverted.

I have been able to collect from journals and reports made to me by letters received from members of the profession an abstract of one hundred cases exhibiting the most favorable results from the treatment of fibrous tumors of the uterus.

Cases.

It is well known that Prof. Hildebrandt, in a communication to the twenty-fifth No. of the *Berliner Wöchenschrift* as early as 1871, called the attention of the profession to the utility of ergotine in

the treatment of fibrous tumors of the uterus. While administering it by hypodermic injections to moderate the hemorrhages so often a troublesome symptom in connection with these growths, he was struck with the decided diminution in the size of the tumor. A continuation of the remedy thus administered, resulted in the entire disappearance of one of them in fifteen weeks. In eight cases, all but two underwent great improvement. The great pain caused by the injection rendered the treatment intolerable to one of these two patients. In the other the treatment was discontinued on account of ergotic intoxication. In four others, the tumors were greatly diminished, and promised speedy cures, but for various reasons the treatment was not continued. One tumor of huge size, reaching above the umbilicus, totally disappeared; while another extending to the ribs, and largely distending the abdomen, was greatly reduced. The debilitating hemorrhages and leucorrhœal discharges were promptly relieved in six of them.

In the *American Journal of Obstetrics* for January, 1875, Dr. Hildebrandt gives a synopsis of nineteen more cases treated by him. Two of these were cured; and in six others the tumors were greatly diminished in size, and the hemorrhages relieved. In eleven of these cases all the disagreeable symptoms were relieved, but the size of the tumor was not perceptibly affected. The two last cases reported in this series of nineteen were not benefited.

Soon after Prof. Hildebrandt made his first report of cases, Dr. Bengelsdorf read a paper upon the subject at a meeting of the Greifswald Medical Society. He alluded to four cases in which he had used the hypodermic injections of ergot. Two of these were in patients after the menopause; neither of them seemed to be influenced by the treatment. In the other two the patients were menstruating and the subjects of severe metrorrhagia. This symptom in both cases was very much mitigated, but the tumors were not materially, if at all, diminished in size. Treatment was interrupted in one of them after the administration of sixteen injections. Dr. Bengelsdorf was favorably impressed by the treatment.

Dr. Chrobak, of Vienna, reports, in the seventh volume, second number, of the *Archives für Gynæcologie*, nine cases. In the first, the tumor the size of a small apple was partially expelled from the cavity of the body into the cervical canal; the mouth of the uterus was dilated by sponge, and the protruding segment removed with the scissors. In case second, after forty-three injections, the tumor,

which was situated in the posterior wall of the uterus, was not reduced in size, but the hemorrhage was cured. The tumor in case third consisted of several nodules in the anterior wall of the uterus; after twenty-four injections, there was no diminution in size, but the hemorrhage was cured. In case fourth the tumor was situated in the posterior wall and reached up to the umbilicus; after three injections the treatment was discontinued on account of the pain and inflammation caused by them. In the fifth case the amount of hemorrhage was reduced, but the treatment was discontinued for the same reasons as in case fourth. The tumor in case sixth was large, the uterus rising above the umbilicus; after twelve injections without results, the patient could not be induced to receive further treatment. The seventh patient was fifty-seven years old, and the tumor showed a multitudinous development; the second injection, which was administered eight days after the first, caused severe symptoms of collapse, and the treatment was discontinued. The tumor in the eighth case was in the anterior wall of the uterus and reached above the umbilicus, and the monthly flow continued from eight to ten days; seven injections were used, with diminution of the tumor and improvement in the hemorrhages; the treatment in this case he expected to continue at some future time. In the ninth case the uterus was anteverted, and the cavity measured four and three-fourths inches in length; after twelve injections the hemorrhages ceased and the tumor diminished in size; the uterine cavity measuring only three and one-third inches in length.

Dr. Lombe Atthill records three cases in the *Irish Hospital Gazette* for September 1st, 1874. The first case was benefited in the diminution of the flow and the improvement of health. The second case was under treatment but a very short time; only five injections were administered, when the patient refused to permit another because of the severe inflammation following them. The third case was benefited, but abandoned from the same cause.

Dr. J. P. White, of Buffalo, N. Y., writes me that he believes it is in this direction—the use of ergot—we must look for relief in the intramural and non-pediculated varieties of uterine fibroids. He says, that in the last year and a half, he has resorted to ergot in these varieties with marked benefit. In a few instances they have been completely absorbed, and in a larger number, the growth of them was arrested, the tumors were diminished in size, and the hemorrhages were suspended. He says that the number of his cases is fourteen, and that not more than one-third can be called

cured, while in almost the same proportion, the growth has been stayed or diminished, and the bleeding arrested.

Dr. E. W. Jenks, of Detroit, Michigan, in a recent letter, says he has used ergot during the past two years in the treatment of fibroid tumors of the uterus with the most gratifying results. Seventy-five per cent. of all cases thus treated were benefited, as manifested by arrest of growth and control of hemorrhage. About ten per cent. of the patients he considered cured.

Dr. C. G. Goodrich, of Minneapolis, Minnesota, sends me a very brief account of the most remarkable case I have yet heard of: The treatment was commenced in 1870, and continued two years. In describing it, he says the uterus filled the whole space between the ilia, and measured in the transverse diameter twelve inches, and in the vertical nineteen inches, extended up under the ensiform cartilage and close up to the margin of the cartilages of the ribs. The treatment was followed by cramps in the uterus, which, he says, produced a wild enthusiasm in the mind of his patient, and inspired her with strong hopes of recovery. Without consulting him, she doubled the dose of medicine, which was administered internally, and as a consequence she was attacked with very strong uterine contractions and symptoms of metritis. This caused him to abandon treatment for about one month, and had it not been for the urgent determination of the patient, he would not have resumed it. She insisted that as this was the first medicine which had ever affected the enlarged organ, she believed it would cure her, and promised to obey his directions if he would proceed. She so promptly and rapidly improved that he doubted if it were not a coincidence with, rather than a consequence of, his treatment. Prompted by this doubt, he abandoned the use of the ergot and belladonna, and continued alterative treatment. The patient soon assured him that she no longer felt the griping pains caused by the remedy, and that the tumor was softer and larger than when she took the ergot prescription. The ergot and belladonna were again resumed, and in four months she was able to make a trip to Boston alone. While absent, she continued to take the medicine. From this time she continued rapidly convalescing, and is now in the enjoyment of fine health.

Dr. H. C. Howard, of Champaign, Ill., sends me an account of two cases treated by him. The first case was in an unmarried woman. The tumor was one originating from a single nucleus, intramural, and as large as a pint measure. He administered

hypodermic injections of ergotine for some weeks, and afterward continued treatment for eight months by administering internally the fluid extract of ergot and belladonna. This case, he says, was entirely cured by his treatment. His second case was in the person of a married woman forty years of age, and the mother of two children. When first seen by him she had been the subject of severe floodings for three years. He found, upon examination, a submucous fibroid as large as a quart cup. He used large quantities of ergot by vaginal injections and by the mouth for four months, at which time the tumor had entirely disappeared.

Dr. A. Reeves Jackson reported to the Chicago Society of Physicians and Surgeons, April 13, 1874, five cases of fibrous tumors of the uterus treated by hypodermic injections of the solution of the solid extract of ergot The tumors in four of these cases were intramural; in the fifth the tumor was subperitoneal. The tumor in one case was entirely cured; in two others the tumors were greatly diminished in size. In another the tumor seemed unaffected, but the profuse hemorrhages from which the patient suffered were diminished in frequency and profuseness. The fifth, a subperitoneal tumor, was not benefited.

Dr. Jackson reports to me three other cases. One was in a colored woman; the uterus reached to the umbilicus: it was entirely cured in three months. In the second the tumor reached above the umbilicus; this was temporarily reduced in size by the ergot, but after treatment was abandoned, it regained its former dimensions. The treatment was discontinued by the patient because of the distressing pain and contractions which occurred after eight weeks' use. The profuse uterine hemorrhage was checked, and health improved.

At the same meeting of the Society of Physicians and Surgeons at which Dr. Jackson's first five cases were reported, Dr. Etheridge reported one case entirely cured. His diagnosis was confirmed by Drs. Gunn and Miller, Dr. Etheridge's associate professors in Rush Medical College. Dr. Fisher also reported an intramural fibroid cured in six weeks. I saw this case, and have no doubt of the correctness of Dr. Fisher's diagnosis.

On the same occasion, Dr. Merriman, one of my colleagues, reported three cases: one, intramural, in the anterior wall, cured; one, subperitoneal, pediculated; the health of this patient was much improved, and the growth of the tumor checked; the patient was still under treatment. The tumor in the third was intramural. At the time of reporting, the size was gradually diminishing.

Dr. Merriman recently reported to me the following very interesting case: "Mrs. K., aged thirty, the mother of three children, came to me in September, 1874, in regard to a tumor in the abdomen. First noticed it in March, 1873. It had caused trouble since October, 1873. Examination revealed a large tumor about the size of a four and a half months' pregnancy; found to be interstitial; situated on the right side, and a little anterior; the sound passed in six and three-fourth inches. She was at once given twenty drops of the fluid extract of ergot three times a day. She came a month later, saying she was much better in health, but the tumor remained the same. Told her to continue the medicine, but to increase the dose to twenty-five drops, and after a time to thirty. Saw her three or four times during the past winter, and twice had to suspend treatment and give opium on account of severe pain and tenderness in the uterine region. Finally, March 23, 1875, I stopped all use of ergot, as the patient was very weak, pulse 110, appetite poor, and a very offensive and abundant discharge came from the uterus. Os very patulous. April 15th, summoned in haste. Something had just come away from the patient. Found it to be an offensive fleshy mass, evidently a partially disintegrated fibrous tumor. Examination showed no tumor in the abdomen, but per vaginam the os patulous, soft, and very sensitive, and the uterus still large. A week later the uterus had regained its normal condition."

Dr. John Morris, of Baltimore, Md., communicates to me a case that seemed to be decidedly benefited by the ergot treatment; but, on account of the violent uterine contractions produced by the remedy, the patient would not consent to continue the treatment.

Dr. Charles E. Buckingham, of Boston, Mass., has tried hypodermic injections of ergot in the treatment of fibrous tumors of the uterus in but one case. The result was entirely negative.

Dr. George Cowan, of Danville, Ky., reports a case in the person of a colored woman, unmarried, and about forty years of age. The hypodermic injections of ergotine were used for two weeks. At the end of this time, the greatest circumference of the abdomen was reduced from thirty-six inches, which it measured before the treatment was instituted, to twenty-eight and one-half inches. The patient, returning home, used the injections herself. Such frequent and painful abscesses ensued, however, that she discontinued them. During the use of the injections an obstinate constipation was removed, and her general health much improved. The abandonment of the treatment was followed by a return of the constipation,

loss of flesh, great debility, and the abdomen increased in size until it measured thirty-two inches. A return to the treatment was followed by the same marked improvement in the general health, and a reduction of the size of the abdomen to twenty-seven and one-fourth inches.

Dr. H. W. Dean, of Rochester, N. Y., sends me an account of two cases treated by him: The first case was that of a patient forty-seven years of age, the mother of three children, the age of the youngest nineteen. She suffered from pressure upon the bladder and rectum, and was the subject of severe metrorrhagia. The tumor extended two inches above the umbilicus, and occupied the lower half of the right lumbar, the whole of the right inguinal, and fully half of the corresponding left abdominal regions. The os uteri was a little to the left of its natural position, and sufficiently open to admit the finger half an inch. An elastic catheter was introduced into the uterine cavity between seven and a half and seven and three-fourth inches. The diagnosis was interstitial fibrous tumor of the uterus. Intrauterine injections through the elastic catheter of half a drachm of Squibb's fluid extract of ergot were made four times during each menstrual interval from April until October, 1874. Injections into the *substance* of the cervix were made with the same frequency from October to the middle of December. The results were, reduction in the size of the tumor until the upper margin sank two inches below the umbilicus, and the uterine cavity measured only four and a half inches.

The second case was that of a woman forty-eight years of age, the mother of three children, the youngest of whom was sixteen. She flowed irregularly, the intervals varying from one to three weeks. The flow was profuse and attended with great pain. In the intervals there was a copious flow of serous leucorrhœa. She also suffered from pressure upon the bladder, and frequent micturition. The tumor occupied the right side of the abdomen, extending nearly to the umbilicus, and to midway between the linea alba and the left ilium. The vagina could not be satisfactorily explored until the hand was introduced. When this was effected, the finger could be easily passed into the uterus. Between the finger, thus introduced, and the hand on the hypogastric region, the presence of an interstitial fibrous tumor was diagnosticated. A flexible catheter was passed into the uterine cavity to the extent of eight inches. Injection into the substance of the cervix was followed in fifteen minutes by continuous uterine contractions which lasted twenty-four hours. This injection was repeated four

times a month. When the amount was increased from fifteen to twenty minims, great gastric and cerebral disturbance, together with intense cutaneous engorgement and uterine pain, ensued. The injections were continued from November, 1873, to the middle of the year 1874. At this time the upper margin of the tumor was but one inch above the symphysis pubis, and the cavity of the uterus measured four and a half inches. Menstruation was quite normal as to time and quantity, and attended with little pain. The pelvic organs were not subject to disagreeable pressure.

Dr. W. C. Wey, of Elmira, N. Y., in a lengthy and interesting letter, gives me the results of his treatment in one case. The patient was forty-seven years old. The bulk of the tumor was equal to both closed hands. It was reduced in six weeks about one-third, and in six months to one-half of its original size. The patient, before the treatment, was very much reduced; her extremities had become œdematous, and exercise was almost impossible from the effects of hemorrhage, which had become almost constant. These symptoms were relieved with great promptitude and in four months the menses had become normal in every respect. His treatment was continued twenty-seven months, but most of the good results, if not all, were obtained in the first six months.

Dr. Edward M. Hodder, of Toronto, writes me that the number of cases in his note-book, since May, 1873, is twenty-five; but all of these reside at a distance, and therefore he saw or heard of them only occasionally. Nearly the whole of them were treated with ergot, but not exclusively, as he combined with it the bromide and iodide of potassium. In the majority of the cases, treatment appeared to arrest further growth, and after a time caused the tumors to diminish in size. In a few cases the tumors disappeared entirely. He gives four cases in minutiæ: in one case the treatment was commenced May, 1873; the tumor nearly disappeared, and the patient is now six or seven months advanced in pregnancy. In the second case, the treatment was begun in June, 1873; the tumor was greatly diminished in size, the patient became pregnant, and was delivered late last autumn. In the third case the treatment was commenced in September, 1873; the tumor disappeared, and the patient is now pregnant. In the fourth case treatment was commenced in September, 1873, and the tumor is now nearly gone, and the patient feels quite well.

Through the kindness of Dr. Hodder I have received the report of another case by Dr. Jukes, of St. Catherines. The tumor was discovered by Dr. Jukes at the time of delivery after a normal

pregnancy. The history of the case shows that its existence had been recognized by Dr. Hodder before the patient was married. Dr. Jukes gave the fluid extract of ergot continuously to this patient for three months, first in doses of one half drachm, and afterward increased the dose to one drachm, combined with the various preparations of iodine. From the beginning, the tumor slowly decreased in size, and at the end of three months had entirely disappeared. Some weeks after delivery, he passed the sound into the uterine cavity six inches, and the organ reached very nearly to the umbilicus. After the three months' treatment the measurement by the sound showed the organ to be very slightly above its normal size.

Dr. Strange, of Aurora, Canada, says that he had on several occasions given ergot internally to arrest the hemorrhage attendant upon fibroid growths in the uterus, and had observed that it tended to retard their further growth.

Dr. L. F. Warner, of Boston, has used ergot in two cases of fibrous tumors of the uterus, but could perceive no beneficial effects.

Dr. J. H. Thompson, Surgeon in Chief of the Columbia Hospital for Women and Children, reports three cases treated by ergot; in all of which, the tumors were reduced in size, the metrorrhagia cured, and the general health, which in all was much impaired, was entirely restored. In one of these cases Dr. Thompson injected the ergot into the substance of the tumor by passing this instrument through the cervical cavity, and thence penetrating the growth. No unpleasant effects followed this method of using the remedy.

Dr. Russel, of Oshkosh, Wisconsin, reports one case in which the tumor of large size was very much reduced, and all the disagreeable symptoms were removed.

During the year since the last meeting of the Association I have treated seven cases.

One was not affected by the ergot, and the patient died six weeks after the commencement of the treatment. She was anæmic to a degree which I have seldom before seen. The remedy was administered hypodermically every day; thirty drops of Squibb's solution of the solid extract being injected each time.

The second patient was the subject of a uninuclear tumor, situated in the anterior wall of the uterus, about the size of the fœtal head. She had profuse hemorrhages at her menstrual periods, and copious leucorrhœal discharges between them, and had become

very anæmic. The discharge ceased and the tumor disappeared in five months from the time she first came under my care. The remedy was at first used hypodermically; but, on account of the pain and inflammation at the punctures, I was obliged to cease this mode of administering it, and gave it internally. Teaspoonful doses of Squibb's fluid extract were given twice a day for the last three months of the time the patient was under treatment.

In three other cases, in which the medicine was given internally, the tumors were very much reduced in size, but did not disappear. The hemorrhages and leucorrhœa were cured, and the patients restored to health.

In another, the hemorrhages and leucorrhœa were rendered much less profuse, but the tumor was not reduced in size.

In a colored senile patient, over sixty years of age, with a large multiple tumor, no effect was produced by the ergot.

In four of my cases I was obliged to suspend the treatment several times for a few days, to give the patients a respite from the almost constant pain.

Five of these complained of great heat and tenderness of the uterus after they had been under treatment about four weeks.

In all, the pulse was accelerated and remained small and weak.

As one of my cases presented some features of more than ordinary interest, I will give it more in detail: The patient had been married twelve years, was thirty-seven years old, and sterile. She had been aware of the existence of the tumor for three years, but could not give a very clear history of its progressive enlargement. The uterus extended three inches above the pubes, and was a little to the right of the median line, very hard and irregular in shape; but I could not discover that there were subperitoneal nodules. Per vaginam the tumor could be felt to occupy the right side and anterior wall of the uterus, and fill up two-thirds of the pelvic cavity. The cavity of the uterus measured four and a quarter inches. A polypus, pyriform in shape, quite firm in consistence, about the size of a pigeon's egg, depended from the mouth of the uterus, and appeared to be attached to the upper part of the posterior wall of the cervix. The diagnosis was intramural fibrous tumor of the uterus, with two nuclei of development, and a fibrous polypus. The patient was somewhat anæmic from the long continuance of profuse leucorrhœa and metrorrhagia. Without removing the polypus, I commenced treatment by giving the patient three grains of the solid extract of ergot three times a

day. The next menstrual flow was not so profuse, and the leucorrhœa diminished almost from the beginning. At the end of four months, the menstruation was normal, the leucorrhœa had ceased, the tumor was reduced to half its former dimensions, and the patient's health restored. A continuation of the treatment two months longer causing no further reduction of the tumor, it was suspended. During the treatment, I watched with much interest the effects produced upon the polypus; examining it once in every ten or twelve days. It showed decided decrease in size at the end of the first ten days, and progressively decreased until, at the expiration of four months, it was not more than one-third the size it presented when first examined. It was twisted off at this time with great ease, and its removal was followed by almost no loss of blood.

The only apology I have to offer for the brevity with which the cases in this paper are mentioned is my aim to give no more than was necessary to obtain a satisfactory exhibition of the results of treatment by the use of ergot.

	No. of cases.	Cured.	Diminution in size of tumor and cure of hemorrhage.	Hemorrhage relieved but tumor not affected.	No result.
Hildebrandt	27	3	11	9	4
Bengelsdorf	4	...	...	2	2
Chrobak	9	1	2	3	3
Atthill	3	...	...	2	1
White	14	4	5	...	5
Goodrich	1	1			
Howard	2	2			
Jackson	8	2	3	2	1
Etheridge	1	1			
Merriman	4	2	2		
Fisher	1	1			
Morris	1	...	1		
Buckingham	1	...	...	...	1
Cowan	1	...	1		
Dean	2	...	2		
Wey	1	...	1		
Hodder	4	1	3		
Jukes	1	1			
Warner	2	...	...	...	2
Byford	9	3	3	1	2
Allen	1	...	1		
Thomson	3	...	3		
Russel	1	...	1		
Total	101	22	39	19	21

Summary of Cases.

The total number of cases here cited is one hundred and one. Twenty-two of them are reported cured. In thirty-nine more the tumors were diminished in size, and the hemorrhage and other disagreeable symptoms removed. Nineteen of the remainder were benefited by the relief of the hemorrhages and leucorrhœal discharges, while the size and other conditions of the tumors were unchanged. Out of the whole number only twenty-one cases entirely resisted the treatment. This shows results decidedly favorable in eighty of the one hundred and one cases.

We may still further appreciate the favorable effects of the treatment by the consideration that in twenty-one cases it was suspended, which is as great a number as resisted treatment.

It is also a noticeable fact that some of the cases in which the treatment was suspended were very much benefited by it.

I have no doubt that many more cases of fibrous tumors of the uterus treated by ergot might have been collected, had time permitted, as I have heard of cases the history of which I could not obtain.

In collating my cases, I have in no way selected or arranged them to influence inferences as to results, but I have faithfully recorded all I have received from correspondents, or found in journals, which were given sufficiently in detail to enable me to arrive at a correct idea of the treatment and its effect.

Modes of using Ergot.

Not much uniformity has been observed by the writers above quoted in the manner of using ergot.

Drs. Hildebrandt, Bengelsdorf, Chrobak, Atthill, and Jackson recommend, and use it hypodermically.

Drs. White, Jenks, and Howard administer it hypodermically, internally by the stomach, and in the form of suppositories in the vagina and rectum.

Some of the arguments in favor of the hypodermic injections are: 1st. It acts more rapidly and with more certainty. 2d. It does not produce the gastric disturbance sometimes caused by ergot when taken internally. 3d. It can be administered in this way when it is entirely impracticable to give it internally on account of the great exhaustion or gastric irritability of a patient.

The main objections to the hypodermic method seem to be:

1st, the pain inflicted by the needle; and, 2d, the inflammation and suppuration which ensue.

Dr. Hildebrandt has met with but one case where the pain of the puncture was an objection to its hypodermic use. With regard to abscesses he says: "I am sure I do not exaggerate when I say that up to the present time I have myself made one thousand hypodermic injections of ergotine for various purposes, or have seen them made and observed their results in the clinical wards in charge of my assistants." And he then adds: "I have never seen an abscess follow the injections made by me personally, and only in three clinical cases did this occur. The chief reason why no abscesses formed among the large number of other injections is that I always injected the fluid very deep into the subcutaneous cellular tissue—perhaps even into the abdominal muscles."

Dr. Atthill met with this difficulty in all three of his cases, although he also injects the fluid deep into the tissues.

Dr. Chrobak was obliged to desist from treatment on this account in four out of his nine cases.

Dr. Cowan was interrupted in his case by the formation of abscesses.

Thus it will be seen that much difficulty is experienced by many in carrying out the treatment.

Dr. Hildebrandt's reason does not seem to be the only one why practitioners are so troubled with this objection, since Dr. Atthill and others have also injected deeply. As far as I can judge, very few have been able, even by the most careful efforts, to achieve the same happy results in this respect as Dr. Hildebrandt.

Dr. Hildebrandt, and also Dr. Atthill, select the lower part of the abdomen as the part in which to make the injections.

Dr. Keating, of Philadelphia, injects just posterior to the great trochanter.

Dr. Jackson selects the deltoid region, and thinks it makes but little difference where the insertion is made.

Dr. White, of Buffalo, injects over the abdomen, into the cervix uteri, and into the substance of the tumor if it is accessible, and has met with no bad results.

Dr. Wey used over two hundred injections in the abdominal region above the pubes in one case, and abscesses occurred in the seat of the puncture as often as once in eight operations.

Dr. Dean commenced using ergot in the form of Squibb's fluid extract by injecting it into the cavity of the uterus through a

flexible catheter, but now he employs the solution of Squibb's solid extract dissolved in water—one grain to five minims. Of this he injects from ten to fifteen drops into the substance of the cervix about four times a month or once a week. He thinks the effects are more prompt and energetic than when administered hypodermically. His instrument consists of a barrel the same size as the common hypodermic syringe and a tube six inches long. He has known inflammation and suppuration to follow but once in his whole experience.

Different Preparations.

Believing the preparation of the medicine employed had much to do in causing the irritation thus observed, efforts have been made to find some form that would not produce the painful results thus described.

Hildebrandt is now in the habit of using Dr. Wernich's formula for the watery extract of ergot, and Dr. Mundé thinks it is very similar to the preparation made by Dr. Squibb. Dr. Hildebrandt added pure glycerine in the proportion of about one part to four of the solution, and the amount of the injection was forty minims. This contained a little over two grains of the extract; probably representing ten to twelve grains of the crude ergot.

Most American practitioners now use Dr. Squibb's preparation above referred to, some of them by dissolving it in pure water, while others add to the water a small amount of pure glycerine. Dr. Squibb recommends a solution of this extract as follows: Dissolve two hundred grains of the extract in two hundred and fifty minims of water by stirring; filter the solution through paper, and make up to three hundred minims by washing the residue on the filter with a little water. Each minim of this solution represents six grains of ergot in powder. Of this solution from ten to twenty minims are injected once daily or once in two days. This is the only preparation I have used in hypodermic injections, and I believe it the best we can at present procure.

Dr. Wey properly lays great stress on the necessity of having the solution fresh, believing that in a very short time it deteriorates, and becomes more irritating to the tissues. He says, "ergot thus administered generally produces prompt effects. In most instances, in half an hour the patient experiences painful contractions of the uterus. The hand applied over the organ at once recognizes the increased hardness in the mass. These contractions increase in

severity for the first two hours, and then continue with vigor for from six to ten hours, gradually becoming less until they cease entirely. Some patients suffer so much from these pains as to refuse to proceed in the treatment, while others bear them without much inconvenience. We do not always observe these painful effects even when the drug operates very beneficially. Sometimes the hemorrhages are controlled, as it were, insensibly, and the tumor slowly decreases in size without the patient experiencing any considerable discomfort. It seems highly probable, from the statements made by my correspondents, and especially Dr. Wey, as well as my own observations, that the benefits of the remedy are produced with more rapidity in the early part of the treatment.

The preparation used internally more frequently than any other is the fluid extract, either alone or in combination with belladona. Each minim of Squibb's Fluid Extract is equal to one grain of ergot. Some recommend that it be given in doses of thirty drops three or four times a day. Others believe that it should be given in larger doses less frequently repeated, as for example one drachm once or twice in twenty-four hours. It is efficacious given in either way, but probably more so in the larger and less frequent doses. This preparation is so offensive, and causes so much nausea in exceptional instances, that it cannot be borne.

Dr. Squibb claims that his solid extract does not offend the stomach so frequently as the fluid extract. This extract may be used in pills coated with gelatine. A pill of five grains is equal to twenty grains of the crude ergot, and may be administered twice or three times daily. From observation of the effects of the different preparations, I am satisfied that this is altogether the most efficient and agreeable for internal administration.

A suppository for the rectum, which in Dr. White's practice acted satisfactorily, may be composed of fifteen grains of the solid extract, and enough gelatine to give it size and form. I have no doubt of the great usefulness of this method of administering ergot.

I think it is also quite certain that the addition of belladonna in some cases increases the curative effects of ergot; how much I am not quite sure. Dr. Goodrich, who reached such splendid results, gave the fluid extract of ergot and belladonna together throughout the entire treatment of his case.

From what has been said it may be inferred that hypodermic injection, if the most efficacious, is also the most objectionable

method of using the ergot, and that in many cases the exhibition of it in this way is rendered entirely impracticable because intolerable to the patients. The profession is much indebted to Dr. E. R. Squibb for his most eligible and efficient preparations of the drug, both for hypodermic injection and internal administration.

May we not hope for great improvement still in the pharmacy of ergot? Ergot produces many good effects besides reducing the size of the tumors and relief of hemorrhage. I have seen, and some of my correspondents mention, great functional improvement in the more important organs. Some patients are relieved by it of obstinate constipation; the appetite is improved, and the general health restored. This remarkable salutary effect is obviously due to its action on the ganglionic nervous system. In exceptional instances, ergot has very disagreeable effects. Dr. Goodrich mentions inflammation of the uterus as one, and my patients often complain of great heat and tenderness in the uterine region. Hildebrandt speaks of one case in which, after the sixth injection, the patient complained of vertigo, imperfect control of her lower extremities, and slight spasms of the flexor muscles of the forearm. Dr. Wey observed severe general nervous perturbation to follow its use in one instance. And Dr. Morris's patient discontinued treatment because of the terrible and tumultuous effects upon the uterus.

Dr. E. P. Allen, of Athens, Pennsylvania, sends me the report of a very interesting case of fibrous tumor treated by hypodermic injection of ergot, in which phlebitis supervened. A condition of one limb was produced precisely similar to phlegmasia alba dolens, and ran its protracted course to a favorable termination. Prior to the accident the tumor had very much decreased in size, but after the treatment was suspended and during the course of the phlegmasia, it rapidly increased again, and the hemorrhages which had been controlled returned. After trying other methods of treatment without any good results, he and his patient in despair were driven to the use of ergot again. It was tried internally with some good effects, but as the remedy thus administered disagreed with the stomach, it was again injected hypodermically with rapid improvement. The injections were used on the side of the abdomen, opposite to that formerly affected with phlebitis. After a number of injections, signs of inflammation of the veins were again observed, and the sound leg passed through all the stages of phlegmasia that had been observed in the first. From

the intelligent observation of Dr. Wey and others, we may fairly conclude that it is not improper to continue the use of ergot during the menstrual flow. I can also add my testimony as to the entire harmlessness when given during that periodical flow.

Auxiliary Treatment.

With the exception of Drs. Goodrich and Howard, all the writers and correspondents quoted, have depended exclusively on ergot for the removal of fibrous tumors of the uterus; in fact, the treatment has been experimental, and had for its object the solution of the question suggested by the publication of Hildebrandt's articles on the use of ergot; viz., will ergot cure fibrous tumors of the uterus? The course pursued was well calculated to, and I think did, test Hildebrandt's treatment pretty thoroughly, but it is doubtful whether this exclusiveness is the best practice. The well-known alterative and sorbefacient medicines have, in rare instances, been credited with the cure of these tumors without the aid of ergot, and it is not difficult to understand that absorption may be promoted with more certainty by the alkaline bromides and iodides, where the vitality of the tumor is first impaired by the action of ergot on its vessels and the muscular fibres surrounding it. Dr. Goodrich seems to have held this view of the alterative treatment, as he prescribed iodide of potassium and bichloride of mercury with ergot. Dr. Howard also employed alteratives in the same way. Both of these gentlemen combined belladonna with ergot. The efficiency of this combination, as represented by their reports, justifies us in believing that the alteratives employed by them were auxiliary in a high degree. How much may be effected by judicious alterative and other auxiliary treatment will doubtless be determined by future observation.

Corrective Treatment.

By this I mean treatment that will prevent or ameliorate the disagreeable effects of ergot in certain exceptional instances. The distressing pain caused by it may sometimes be made more tolerable by the administration of hydrate of chloral, without very materially influencing its other effects. Indigestion, constipation, hydræmia, and nervous debility may be corrected by tonics, alteratives, laxatives, and stimulants given simultaneously with ergot. In short, the general condition of the patient should be cared for in the same rational manner as if ergot was not being administered.

General Conclusions.

The fibrous tumor of the uterus may be affected by ergot in three ways:—

1. It may be gradually disintegrated and absorbed. In this way it disappears without any violent or disagreeable symptoms.

2. Its nutrition may be so interrupted as to produce a rapid destruction of its vitality; thus, decomposition may occur within the capsule, and a semiputrid mass be expelled a little later. This process is accompanied with evidences of inflammation of the uterus, and toxæmia more or less grave, according to the size of the tumor, the length of time between the commencement of decomposition and the expulsion of the tumor, and the vital resistance of the patient.

3. The tumor, inclosed in its capsule, may be totally or partially expelled from the cavity of the uterus, attended with a greater or less degree of inversion of the organ. In this condition it becomes amenable to surgical process for completing its removal.

When these tumors disappear in the manner first mentioned, no evil consequences to the patient are experienced, but grave and even fatal effects are likely to arise during their gangrenous disintegration within the uterine tissues. Even when the tumor is small, great suffering and peril to the patient supervene, and when large it is pretty certainly disastrous. I have not been so unfortunate as to witness fatal consequences from the effects of ergot, but I have seen the overwhelming results of gangrenous disintegration of large fibrous tumors arising from other causes. In the case of a large tumor now under treatment, I was upon one occasion forcibly reminded of what might happen by the violent and prolonged contractions of the uterus, brought about by large doses of ergot. Very dangerous symptoms of inflammation were excited in this case.

Ergot is not always immediately, or even soon, followed by contraction of the uterine fibres. Its effects are in certain cases cumulative; hence its steady administration for a length of time may be followed by extremely violent and prolonged action when it does occur. In the case above referred to, its effects were not observed until the patient had taken the medicine for two months; then with explosive suddenness the patient was attacked with terrific uterine contractions, which did not subside under the use of opium and chloral until the fifth day. The patient took the

fluid extract internally. This effect should be regarded as possible in all cases where the patient appears to resist the influence for several weeks, and when the tumor is large we should be cautious to avoid, and prompt to counteract, such consequences by appropriate means.

The violent action of ergot may also be brought about somewhat suddenly by increasing the quantity beyond a moderate amount.

From a review of the cases it will be seen that the gradual disappearance of the tumor takes place under doses too small to cause the violent action here referred to. Dr. Hildebrandt administered hypodermic injections containing what was equivalent to fifteen or twenty grains of crude ergot once a day or every second day. Dr. Dean's treatment proved to be sufficient, although the amount was not greater than Hildebrandt's, and was administered but once a week.

Our opportunities for observation have been too limited to enable us to arrive at accuracy of detail in the use of ergot for the cure of fibrous tumors of the uterus. I think, however, we are warranted in saying that moderate doses of ergot, say half-drachm doses of the fluid extract twice or three times a day given internally, or five grains of the solid extract once a day hypodermically persistently used, is generally sufficient when we wish to cause a gradual disappearance of the tumor, and that this quantity should not be exceeded in the treatment of large multinuclear tumors. When, however, we desire to cause the expulsion or gangrenous disintegration of a tumor, it is necessary to give much larger quantities and persevere until it produces the violent action necessary for such effects.

I conclude my address with the cautionary observation that ergot, in the treatment of fibrous tumors of the uterus, is a prompt and very powerful agent, which cannot be recklessly used without great danger; and that much careful observation is still necessary to enable us to determine the circumstances under which its administration will be both safe and effective.

PIGMENTATION—A RARE DISEASE AMONG INFANTS.

By M. B. WRIGHT, M.D.

Early in 1873, several deaths occurred among the infants born in the Cincinnati Hospital. They sickened and died soon after birth, and from the discoloration of the face, the only prominent symptom, it seemed to justify the inference that there was imperfect lung structure, and deficient oxygenation of the blood. The cases increasing, and other symptoms unusual in character appearing, a demand came pressing for more critical examinations. They were carefully made, and the results, with an outline history of the symptoms of each case, are as follows.

Case 1.—Infant (male) of Emma R., born January 5, 1874.

Jan. 15. At times during the last few days respiration has been irregular. Now the surface has a dusky hue. There is languor, with disinclination to nurse. Occasionally, there is twitching of the hands. The eyes are turned upwards—the feces are dark, and the urine leaves a coffee-ground stain on the diapers.

17*th.* With a dusky, there is a slight yellow tinge of surface. The tunics of the eye present a greenish hue.

20*th.* The skin is more natural, and there is a manifest desire for the breast.

30*th.* Is feeble, but the general condition indicates convalescence. Taken from the hospital.

A month later, the little one was reported to be in a tolerably healthy condition.

Case 2.—Infant (female) of Eliza W., born January 30, 1874.

Feb. 13. Has been losing flesh, seemingly from deficient nourishment. Scattered over the mouth is a curdy exudation. The skin has a dark yellow color—there is some cough, and drowsiness is constant. Urine dark brown, and intestinal discharges resemble meconium.

18*th.* Bowels inactive, and vitality feeble. Died on 19th at 12 M.

Autopsy.—Lower lobes of both lungs imperfectly dilated—readily

filled with blowpipe—foramen ovale pervious. Pelves of kidneys full of a dark substance, the consistence of clay.

Case 3.—Infant (female) of Martha M., born February 3, 1874.

Feb. 16. Is deeply jaundiced—nurses poorly—is very feeble.

18*th.* Died at 3 P.M.

Autopsy.—All the tissues normal.

Case 4.—Infant (male) of Sarah H., born February 5, 1874.

22*d.* Is small and feeble—has cough and coryza. Color of skin dark yellow.

23*d.* Discoloration increased.

27*th.* Urine and feces dark. Has been sinking slowly, and died to-day.

Autopsy.—Lungs healthy—right auricle contains a light-colored, firm clot. Pelves of kidneys filled with a dark-colored and firmly moulded substance. Over the right parietal bone is a considerable swelling (cephalæmatomia) 2½ in. by 3 in. in size, filled with a muddy-like fluid. This fluid was beneath the pericranium. The outer table of bone to the extent of the tumor was absent. A bony ridge, seemingly elevated, encircled the excavation, and defined the boundary of the imperfect bone structure.

Case 5.—Infant (female) of Mary D., born February 8, 1874.

The entire surface of the body presented a bluish tinge. The child was feeble, and died on the fourth day.

Autopsy.—Lungs not expanded, sink in water, and are dark colored.

Case 6.—Infant of Mary C., born February 16, 1874.

25*th.* The mouth has been aphthous for a few days, and to-day there has been vomiting. The skin is dark yellow, also the eyes. Urine darkens the napkins like strong coffee; feces greenish.

26*th.* Died at noon.

Autopsy.—Lungs healthy; heart filled with tough coagula; foramen ovale open and large. Pelves of kidneys filled with slate-colored, thick substance.

Case 7.—L. S. was delivered of a male child October 15, 1874. It was well developed, and there was no evidence of unnatural function, except in the feeble cry. In three or four days, a curdy exudation was scattered over the mouth.

26*th.* The surface generally has a dull waxen appearance, with a dusky hue about the mouth and forehead.

29*th.* The latter is deeper and more diffused. Intestinal discharges dark green; urine natural in color and quantity; vomits

occasionally; hands and feet cold. Evening visit. Has been passing urine chocolate color. Temperature 95.

31*st*. Urine scanty; muscles of the neck rigid; head drawn backwards. Died at 5 A. M., November 1.

Autopsy.—No organic disease; the kidneys were filled with a black granular substance. The testicles had not entered the scrotum.

Case 8.—Infant of S. S., born March 5, 1875.

25*th*. Is feeble; refuses the nipple; screams often as if in pain, especially when moved; over the sacrum and on the left wrist, it is swollen, red, and tender.

26*th*. There is febrile action; pulse 150 to 160; breathing frequent, some cough; temperature 104½.

27*th*. Has had slight spasms. Pulse, temperature, and respiration increased. Tumefaction over sacrum more prominent and fluctuating. Increased redness and swelling of wrist. Swelling and redness have appeared over the left internal malleolus.

28*th*. The right internal malleolus and right olecranon are swollen. The skin is dull yellow, and the stools are curdy.

29*th*. Is in strong convulsions. A rose rash covers the body; breathing alternately slow and rapid; eyes injected. Died at 11 A. M.

Autopsy.—Portions of right lung are in a state of atelectasis, but are easily dilated. Foramen ovale closed. Kidneys, with other abdominal organs, healthy. All the swellings contained pus.

This case, as well as 3 and 5, is not an instance of decided pigmentation, but the probabilities are that it was produced by the same local poison.

Case 9.—Infant (male) of Mary F., born April 5, 1875. Well developed, and to appearance healthy. Nursed well from the bottle, and continued in good condition until the 12th. Then the skin became dull yellow, and the eyes greenish. In a few hours the skin became dusky, the hands, feet, and lips quite dark. In the right axilla is a hard and large ecchymosed spot. Intestinal discharges curdy and green.

13*th*. Urine coffee color, and containing a dark substance easily collected on napkins. The urine has just been discharged, and, in the end of the urethra, is a mass of black, clay-like substance.

14*th*. External appearances the same; urine discharged with large quantities of dark sediment.

15*th*. Skin not so dark; urine as yesterday; feeds well; heat 98½.

16*th*. Vomits a green mixture; skin lighter; urine the same.

17*th*. Still vomiting; general conditions same.

18*th*. The skin has the dull grayish color of death.

19*th*. Skin a more natural appearance, and at an early visit, symptoms seemed better. Died at 11 A. M.

Autopsy.—Body much wasted. Heart and lungs normal. A small quantity of yellowish, slightly turbid fluid was found in the abdominal cavity. There were soft adhesions at different points between peritoneal surfaces. Connective tissue about kidneys infiltrated. Kidneys soft and dark; apices of pyramids black; black substance easily pressed out of tubes. Liver normal; spleen very dark.

Case 10.—Infant (male) of M. D., born April 6, 1875.

17*th*. Dark surface; eyes yellow-green. Temperature 100. From this date to 20th the skin, urine, and feces presented appearances thoroughly characteristic.

20*th*. Skin paler; and black deposit absent from the urine. Takes its food readily, but has difficulty in swallowing.

21*st*. Symptoms less prominent, and, as a whole, indicate continued improvement. Notwithstanding the prognosis was favorable, death occurred at 10 A. M.

On post-mortem examination all the organs were found healthy except the kidneys, which contained the usual black substance.

Case 11.—Infant (male) of E. R., born April 24, 1875.

May 2. Had a yellowish tinge from birth. It is becoming dingy; surface cool; feces and urine dark, the latter without pigment deposit; temperature of mouth 98. Later in the day, urine had a black deposit; temperature slightly increased. Died at 7 P. M. Usual symptoms, except aphthæ; lasting only twelve hours.

Autopsy.—The body of this infant was submitted for inspection to the Obstetrical Section of the American Association. After opening the abdominal cavity, the intestines and kidneys were the only viscera examined. The former were dark, and the tubes of the latter were filled with pigment. No loose substance was found in the pelves.

Case 12.—Infant (male) of M. R., born April 19, 1875.

May 4. Whole surface jaundiced; eyes green; restless during night; aphthæ. Urine black with deposit; feces dark green; temperature 98½. 5 P. M. Dark color increasing; exhaustion great; died at 11 P. M.

Autopsy.—Kidneys filled with dark substance.

Case 13.—M. C. was delivered of a female child, April 24, 1875.

May 10. The face of the child has a dirty-yellow appearance;

dark around the mouth; curdy exudation on the tongue, lips, and cheeks; pupils sluggish; nurses tolerably well.

11*th*. Stools dark green; urine normal in quantity, but dark.

13*th*. Face more dusky; eyes greenish; semi-comatose; dark deposit in urine. Temperature 98½.

17*th*. Condition about the same; still nurses.

18*th*. Surface dull white; is restless and constantly moaning.

19*th*. Died this morning.

Autopsy.—Well nourished and fat. Lungs unusually pale; heart normal; right ventricle contained a whitish clot, which extended into the pulmonary artery; the left auricle contained a firm clot; right auricle pervious; intestines unusually white; liver and spleen normal. The pelves of the *kidneys* contained a brown consistent substance; the pyramids were of dark slate color; on section, the dark substance followed the direction of the tubes and radiated towards the periphery. The cortical substance of the kidney was lighter colored than usual, and seemed fatty. Brain healthy; the sinuses at the base contained clots, partly white, partly colored.

Statement of Dr. Dandridge, Pathologist.

Post-mortem Examination of Infants with Brown Skin and Peculiar Deposit in the Kidneys.—The description here given of the autopsies held on these children, is the result obtained from a number of examinations, the constant and characteristic lesion in all cases being the peculiar deposit in the kidneys.

The bodies appeared badly nourished, and the integuments were of a dark dusky hue, this disappearing somewhat if the examination was made long after death.

In one case there were pyæmic abscesses in the neighborhood of several joints—both ankles and one elbow—these abscesses, however, did not seem to be connected with the cavity of the joints.

The lungs were generally perfectly normal, and they could be easily and completely inflated.

Heart normal.

The peritoneum, both on the intestines and parietes, had lost its normal glistening appearance, and was of a dusky hue.

The intestines were empty, and they presented nothing abnormal.

Liver and spleen normal.

Kidneys slightly increased in size; the surface appeared perfectly normal. The pelvis was filled with a substance resembling

moist coffee-grounds; rubbed between the fingers it gave a slightly gritty feel; removed from the body it soon became dry, and could be broken up into a fine powder.

The pyramids were nearly a dark slate color, and apparently were infiltrated by the same substance found in the pelvis.

The cortex was normal in quantity and appearance.

Microscopic examination of the mass found in the pelvis was negative, there being nothing seen but amorphous granular matter. No crystals of any sort were seen.

A microscopic section of the kidney showed that all the uriniferous tubes were filled with a highly refractive brown material.

Where the section had struck the tube longitudinally, it seemed to be completely filled, the walls were bulged out, and their outlines were quite irregular.

The normal epithelial cells lining the tubes could nowhere be seen. Transverse section, however, in some of the tubes showed that a central channel still existed, the brown substance being adherent to the walls, and apparently taking the place of the usual lining cells. All of the collecting tubes of the larger size were thus affected; the convoluted and looped tubes, as well, showed in places the same condition. The glomeruli were rather more opaque than usual. The bloodvessels could not be satisfactorily followed; no injection of them was made. The connective tissue was unchanged except at points, where there seems to be an infiltration of germinal cells.

The bladder was found normal in all cases, sometimes containing a little brown fluid, but never any deposit.

The mucous membranes were not examined.

U. P. DANDRIDGE.

The following examination was kindly furnished by Dr. Mackenzie, Pathologist.

Urine.—The urine was quite turbid, and of a dirty-brownish color. After it had stood for some hours, a brownish-gray deposit subsided, but the supernatant fluid did not become perfectly clear. Specific gravity 1012. Reaction neutral. Boiling slightly diminished the turbidity; the same effect was produced by the addition of nitric acid, and liquor potassæ also rendered it somewhat clearer. In no case, however, was the influence of these agencies at all well marked, the urine remaining after their application quite turbid. A specimen of the urine was filtered, and the

filtrate, treated with heat and nitric acid, gave evidence, by becoming somewhat cloudy, of the presence of a small quantity of albumen. Another specimen, boiled with a small quantity of nitric acid, filtered, and then evaporated to a quarter of its bulk, did not, upon the addition of equal parts of nitric acid, give rise to the formation of crystals of nitrate of urea, thus indicating that, if present at all, the urea must have been very small in quantity.

When examined microscopically, the deposit presented a perfectly amorphous appearance, not unlike that of the amorphous urates, but much darker in color. No blood-corpuscle nor any other formed element of definite shape could be detected.

The dark material so frequently passed with the urine was on several occasions examined for hæmine crystals by Teichmann's method (the addition of chloride of sodium and glacial acetic acid), but the results were invariably negative.

J. C. MACKENZIE.

The urine subjected to examination by Dr. Mackenzie was obtained by the nurse, who held the child several hours, waiting for its escape. After an ounce or two had been passed, a mass of pigment material was arrested at the end of the urethra, and gently squeezed out.

Two dried specimens of the dark substance, one taken from the pelvis of a kidney, the other from the end of the urethra, were forwarded to Jos. G. Richardson, M.D., well known to the profession as an accomplished pathologist and microscopist, who very kindly examined them and gave me the *negative* result. His language is: "The material seems to be almost if not quite insoluble in water, glycerine, cold alcohol, boiling alcohol, and boiling sulphuric ether. Under the microscope, it is seen on pressure to break with a conchoidal fracture, and to have a fine granular structure, which even beneath a high power (2000 diameters) exhibits no trace of blood-corpuscles, or of cellular elements, epithelial or otherwise in their character. Exposed gradually to the heat of an alcohol flame (upon platinum foil), it swelled up, partially fused, then took fire and burned with a yellow flame, emitting a strong animal odor, and finally left a mere trace of orange-gray ash."

Subsequently, I sent to Dr. Richardson one of the lighter colored kidneys for examination. The following letter is expressive of his views, and is given entire. Indeed, it will scarcely admit of abbreviation.

No. 1620 Chestnut St.,
Philadelphia, May 15, 1875.

M. B. Wright, M.D.

Dear Sir: I forward herewith, for your inspection, a thin section of that very interesting kidney you sent me by express on the 8th inst. It is cut perpendicularly to the surface of the gland, nearly through the axis of one of the pyramids, and under a magnifying power of from 50 to 100 diameters, you will see a beautiful display of the uriniferous tubules, brought most clearly into view, in consequence of their having become *filled with a granular matter*, yellowish in their smaller convoluted, and brownish in their larger straight portions. This granular material, which has obviously been ejected in considerable quantities from the apices of the cones, no doubt under the influence of compression and perhaps chemical action, formed the dark substance of which you last month sent me samples, and which, if carefully examined in its moist state, would probably have exhibited traces of its constituent cylindrical tube casts. Beneath a high power, I was able to *positively* distinguish that these *casts still occupying the tubules were made up of red blood-corpuscles*. By tinting a very thin section with aniline or iodine (according to the method I employ for the diagnosis of blood-stains), I found it easy to measure the magnitude of the aggregated red disks, and with a power of 2000 to determine their average diameter in one particular sample (even in a specimen which had been treated with absolute alcohol, clarified with oil of cloves, and mounted in damar), at $\frac{1}{3500}$ of an inch.

Since no visible alteration in the renal parenchyma could be detected, the malady producing a fatal result in this case appears to have been a simple hemorrhage from the kidney, the "Néphrorrhagie" of Lebert, although it must be admitted that the profuse flow of blood from the capillaries may possibly have been a symptom of the first stage of ante-tubal nephritis cut short in its incipiency by the death of the patient.

Accepting either hypothesis, however, such disease, occurring coincidently in your hospital to two new-born children, is certainly an event of great interest and rarity, since Dr. Dickinson, in his exhaustive monograph (*Pathology and Treatment of Albuminuria*, New York, edition 1868, p. 29), declares that ante-tubal nephritis "is nearly unknown during the first year of life;" whilst Prof. Lionel S. Beale (*Kidney Diseases, Urinary Diseases*,

and Calculous Disorders, Philada. 1869, p. 387 *et seq.*) does not give any account of hæmaturia of very young infants; nor has Prof. H. Lebert, in his magnificent *Traité d'Anatomie pathologique* (Paris, 1861, tome ii. texte, p. 349), made any reference to renal hemorrhage of the new born.

Hoping this brief report, made under the pressure of numerous engagements, may be of service to you,

I remain, dear sir,

Respectfully yours, etc.,

JOS. G. RICHARDSON, M.D.,

Microscopist to the Pennsylvania Hospital.

After much research, I can find no allusion made to pigmentation among infants, in any of the periodicals or standard works. The remarks of Billard under the head of "Spots or Nævi Materni," can scarcely be construed as bearing upon the subject before us. He says in reference to these spots, "they present nothing more than a simple change in the cutaneous pigment, and are in reality a peculiar property of the skin."

In his *Anatomical Description of Pigment Liver, and of the Coexisting Conditions of the Spleen, Brain, Kidneys, etc.*, Frerichs says in regard to the diseases of adults, "the kidneys frequently participate in the pigmentary deposit to a remarkable extent. When this is the case, gray spots make their appearance in the cortical substance; and in a few cases we may observe dark lines in the pyramids following the course of the bloodvessels and uriniferous tubes. Under the microscope we can detect the pigment matter in the capillaries of the cortical substance, and particularly in the Malpighian bodies; now and then we find isolated little fragments in the uriniferous tubes."

We have no opinions to express in regard to the character of malignant malarial fever, nor theory to support as to the origin of the pigment associated with it. Most observers have credited its formation to the spleen, and while Frerichs admits "there are many grounds for such an opinion," he says, "we must keep in view, *à priori*, the possibility of the same blood metamorphoses taking place in other parts of the body, and we cannot arrive at the conclusion that these changes are exclusively confined to the spleen, until observation lends no support to the participation of other parts of the vascular system."

In a chapter on "Marsh Fevers" Trousseau observes, "I must

not omit to mention a pathogenic theory promulgated in Germany by men whose works I exceedingly esteem. The theory to which I refer attributes the pernicious symptoms to *pigmentary embolia*."

"This change of color" in the liver "is due to the accumulation of pigmentary matter in the vascular apparatus of the organ; the liver is pigmented." "The spleen presents exactly similar lesions." "We also find black pigment in the capillaries of the lungs." "It is likewise found in the brain." "The pigment is the result of the transfusion of the hæmatine; and this transformation may take place *anywhere*, even *external to the vascular system*."

I have not been able to find the report of a single case of pigmentation among infants, until the *Boston Medical and Surgical Journal*, March 11, 1875, was placed in my hands. The leading paper in that number of the journal is entitled "An Unusual Result of Septic Poisoning, Discolored Skin," etc. Ten cases are there given, taken from the records of the Boston Lying-in Hospital, and worked into an ingenious essay (graduation thesis) by William Sturgis Bigelow. These cases are almost identical with those which have fallen under my observation. The discoloration of the skin, the morbid condition of the mouth, the character of the dejections, and the general exemption from structural lesions are the same. In other respects there was a marked difference. In the former cases there was dark discoloration of the diapers by urine in one only; while in the latter, dark urine and still darker deposits were universal. In the Boston cases coagula were found in the kidneys, ureters, or bladder, or in all at the same time. In the Cincinnati cases not a drop of coagulum, or anything that bore the slightest resemblance to blood, could be found anywhere except in the proper channels.

The two cases quoted from the *Archives de Physiologie*, September, 1873, and the cases that occurred at "the *Hôpital de la Maternité* at Lyons," more closely resemble those of the Boston than Cincinnati Hospital, inasmuch as *hematuria* was one of the characteristic symptoms.

The question is naturally suggested, What is the nature of these masses of pigmentary granules? They have been examined by several experienced pathologists and microscopists, in every possible way, and nothing but negative results have been obtained. A careful experimentalist, to whom a mass of pigment material was given without any explanation as to its source, remarked "it seems like double burnt cinder."

To say that these granules are *spores*—organized things—endowed with a living principle, would be to stretch the imagination beyond all limits. That they are the result of destruction of blood globules is possible; still there is nothing in their shape, size, or elements to justify this as a positive conclusion. That they existed in the blood, independent of renal action, is certain, for they were plainly seen under the microscope intimately associated with both white and red globules. The blood used for experiment was taken from the longitudinal sinus of one of the deeply pigmented children. It is true that other blood was examined without the pigment granules being found, but it was taken from those who had become bleached to a pearl-like whiteness—who were seemingly bloodless—the granules having escaped through the kidneys.

Exclude the granules from the blood, and suppose the disease to be a true hæmaturia, we still need light as to the manner in which the globules or other blood elements are metamorphosed in the kidney. No foreign element or morbid product was found in the urine, nothing that could convert blood globules into black amorphous granules.

That the cases presented are those of "blood poison" may be true, but how induced? "*Malarial* poison" has not been in operation, nor do the cases resemble those of "malignant remittent fever."

In volume 13. part ii., p. 996, of the *Edinburgh Journal*, is an article on "Intermittent or Paroxysmal Hæmaturia," furnished by E. H. GREENHOW. He notices seven cases of this disease, and adds: "This disease, which has been observed only of late years, would seem to be of very rare occurrence, for ten or eleven cases, published by as many different observers, are all that I have been able to find in English medical records."

In addition to ordinary symptoms of intermittent fever, are those which mark the kidney trouble. "From half an hour to two hours after the chilliness or rigors the patient has never failed to pass the first dark-colored urine, which has always been highly albuminous, and has contained numerous crystals of oxalate of lime, with more or less of brownish or yellowish-red amorphous granular matter, and a few hyaline casts, but only occasionally some stray blood-corpuscles." His theory is, "that the disintegrated blood transudes through the walls of the bloodvessels in the Malpighian bodies." He "regards the kidneys rather as the organs of elimination than as the seat of the disease." The article

concludes thus: "I strongly incline to believe that the true pathology of the disease is to be sought in the condition of the blood itself, rather than in any local organic change."

Some of the children had died after the skin had changed from a dark to an extreme white color—after the curdy exudation had disappeared more or less from the mouth—after the urine had become more natural—after the green color of the dejections had changed—in a word, after the general change had justified a favorable prognosis, they have died. Is there not, then, some other blood change tending to a fatal result than in the admixture of amorphous black granules?

As puerperal fever existed in the obstetrical ward of the hospital from time to time during the two years the infants were so strangely diseased, it may be interesting to inquire to what extent the mother exerted a destructive influence over her own offspring.

The mother of the first reported case had no very untoward symptom, although her convalescence was somewhat protracted. For a time she had scanty urine, and a deficient supply of milk.

The mother of the second child had a favorable and rapid convalescence. A mild attack of milk fever occurred early in the mother of the third child. The mother of the fourth child died of puerperal fever two days before the child was observed to be sick. No fever followed the fifth delivery. It may be stated here, without going any further into particulars, that not more than half the mothers had puerperal fever in an aggravated form, and of these about one-fourth died.

From all this it is apparent that the disease could not have been induced by contact with puerperal fever cases. Besides, some of those who had puerperal fever suckled their children after their fever had become decidedly manifest, without contamination.

Epidemics of puerperal fever and erysipelas have prevailed at the same time in the same neighborhood, and on this ground a belief has been entertained of their identity. These cases have existed independently in the same ward, and seemingly without the slightest relation the one to the other.

Three cases of erysipelas appeared in the ward during the period embraced in the above cases. In one several abscesses formed. In an adjoining bed lay a patient with crural phlebitis. An erysipelatous redness spread over most of the opposite leg. Another patient had a temporary blush on one of her legs.

Had the poison of erysipelas anything to do with the initiation

of the infantile cases? If negative evidence is of any value in this connection, I should say not; for erysipelas has appeared in the ward many times without the presence of such disease as is here presented among the infants.

Infantile jaundice is common in hospitals as well as private practice, and as some of the cases with dusky skins and dark urine had also the outward sign of jaundice, the inference would have been easy, without further evidence, that the biliary apparatus was at fault. Again, stomatitis is a common attendant upon jaundice, and it was present more or less in all the above cases. The first case was treated as jaundice, and recovered. The same treatment failed subsequently.

The *post-mortem* conditions of the second case accord with the observations of Jörg, that atelectasis is present with an open foramen of the auricular septum. But the sixth case disproves the assertion of the same author, that an open foramen and atelectasis are *invariably* associated.

The fifth child was born prematurely. It was not cyanosed, but he ordinary red color of an immature fœtus was so combined as to give it a bluish tint over the entire body. A brief relation of the state of the mother will naturally suggest the questions—Had the blood of the mother such an effect upon the placental circulation as to induce an early expulsion of the fœtus?—or did the emanations from her body enter the lungs of the child, and thus impress fatally its delicate tissues?

The mother was transferred from the surgical to the obstetrical ward, February 8, 1874, and delivered the same day. The right mamma was large, and had a dark, ecchymosed appearance. The inferior portion was devoid of epidermis, from which issued an offensive discharge. The entire swelling was boggy, without any distinct point of fluctuation. Constitutional symptoms supervened, requiring stimulants, tonics, and supporting diet, with whiskey and carbolic acid as a local stimulant and disinfectant. Large sloughs were thrown off from time to time, to the destruction of the mamma down to the pectoral muscle. The odor from this diseased tissue was so offensive and sickening as to necessitate the removal of the patient to a separate room. There was doubtless a bad condition of system in the mother previous to delivery, and this may have somewhat enfeebled the child *in utero*.

Allusion has already been made to a fluctuating tumor on the right parietal bone of one of the infants. It was not a serous

swelling (*caput succedaneum*), which indicates the most dependent part of the fœtal head during labor, but a true cephalæmatomia. It was filled with blood-like material, of semifluid consistence, situated between the pericranium and inner table of bone. To the extent of the tumor the outer table was absent, and its boundary was defined by a hard ridge. Authors have attributed this ridge to an osseous exudation, to coagulation of blood, to fibrinous deposit, to deception of touch. In this case, however, dissection proved it to be an edged circle of bone, occasioned by the absence or destruction of the outer table of bone within the circle.

As no case similar to the following has ever occurred in the hospital during the thirty years of my observation there, and as it was associated with the preceding cases, I am induced to give it a place in this paper.

On the 8th of October, 1874, Agnes A. was delivered of a seven months' fœtus weighing three pounds. It was feeble, even more feeble than is ordinarily observed in a fœtus of this premature age. It was fed from necessity, and could swallow only a few drops of liquid at a time. As the red tinge of skin belonging naturally to a short-term infant began to fade, a slight yellowness took its place. Pain or uneasiness was manifested by a whine rather than distinct cry. The joints were stiffened and seemingly painful on forcible motion. The lower pressed strongly against the upper jaw, and considerable effort was required to give mobility to the joints. The skin conveyed the idea of tightness, and could not be wrinkled even by strong pinching. The muscles felt hard, and the limbs were more like dry sticks than pliable texture. The lids were applied closely to the eyeballs, and the lips were stretched tight over the gums. Both were destitute of voluntary motion. The scalp and cranial bones were like a solid immovable structure. There was too much fixed rigidity for spasmodic action. At one time a few drops of blood escaped from the vagina. Death occurred eleven days after birth.

Post-mortem Appearances.—The umbilical cord had desiccated to firmness, but was still adherent. The umbilical vessels were free from obstruction or inflammation down to their entrance into the liver. All the thoracic and abdominal organs were in a healthy state. The subcutaneous cellular tissue was rather dry than moist.

Was this a case of "sclerema," "skin bound," "œdema cellularis," or was it "trismus nascentium?"

As there were no convulsive movements, no bending of the

head backwards, no opisthotonos, no violent contractions of the fingers or toes, no bending of the foot upon the leg, my diagnosis has been "sclerema."

Different opinions have been expressed by writers more or less familiar with this curious malady of infancy. An early belief was that the liquor amnii played an active part in the condensation of the integuments, and, again, it was attributed to impressions on the mind of the mother while viewing marble statues.

Among the more recently assigned causes may be mentioned cold, impure air, hepatic derangement, gastro-intestinal disease, shortening of the intestinal tract, imperfect closure of the foramen ovale, obstruction in the pulmonary circulation. Most, if not all, of these causes were inoperative here.

Condie remarks that "there is always more or less disorder of the alimentary canal" in induration of the cellular tissue. Then the case before us must be deemed an exception.

Billard has given us an extended argument against the many theories advanced upon the subject of causes. He admits that out of 173 cases treated in a medical infirmary, 74 occurred during the winter; but, as disproving the exclusive influence of cold, he cites the remaining cases which were treated during the summer months.

The same author admits that a yellow tinge of skin is often associated with the disease, but claims that it is not an essential element. During the three or four earlier days in our case, there was a yellow mixed with the red tinge of skin. This, however, was not jaundice, if the term is restricted to the absorption and commingling of bile with the circulation.

The prevailing physiological doctrine is, that the coloring matter of the bile is formed in the substance of the liver, and that its reabsorption results in the bile color of the skin. Is this an exclusive physiological fact? If so, how are we to explain that other fact, that the skin may be deeply yellow or dark brown, while all other tissues retain their normal color? and this, too, without any obstruction in the liver ducts. Several of the infants whose diseases I have reported to the Association, and others, have presented variously discolored surfaces, without any change in other tissues or organs, save the kidneys. Is it not fair to infer that the skin, either by transpiration or secretion, or some peculiar function, is capable of extracting coloring material from the blood, independent of the liver or the real absorption of bile?

Yellowness of skin, which is common among infants, especially those of feeble action, disappears without medication, and without direct evidence of hepatic derangement.

From observation in the diseases of infants, I have sometimes been induced to believe that previous to the full establishment of the hepatic function, or when the kidneys fail to disengage effete material from the circulation, the skin performs a substitute office.

In 43 cases Billard found no disease of the lungs; in 34 they were variously affected. Forty presented the foramen ovale closed. No shortening of the intestinal tube in any case was found after careful measurement.

In 50 out of 70 cases there was intestinal inflammation, yet he thinks the non-inflammatory cases are sufficiently numerous to exclude the former as a cause of the cellular induration.

The views of Billard are mainly that induration of the cellular tissue in young infants is nothing else than simple œdema, analogous to the œdema of adults, and this he ascribes to a suspension of cutaneous transpiration, "and an obstruction in the course of the blood, resulting from its quantity in the circulatory apparatus."

Condie quotes largely from Elsaesser, and coincides with him in the statement that "the causes of the disease appear to differ but little from those which give rise to infantile erysipelas. To this disease it has a very close resemblance, and has prevailed in common with it in the same hospital."

The obstetrical ward of the Cincinnati Hospital had not contained a case of erysipelas for many months, and not a feature of this disease was present in our case, nor was the œdema of Billard. My inference is that this disease was of that form which consists of "induration or concretion of the adipose matter," and not that "from serous infiltration of the cellular tissue."

In the consideration of the case a brief outline of the mother's condition may be given.

Her labor was natural. Four days subsequent to delivery (October 12), both lochia and dejections became offensive. An eruption in red elevated patches appeared on the forehead. On 16th, 17th, 18th, had a chill, temperature following varying from 102° to 105°; pulse at times full as well as frequent; tongue from day to day became more and more loaded with thick brown fur.

19th. Has been vomiting; pain in right hip; abdomen greatly swollen, but without pain or tenderness on pressure. Symptoms gradually, nay rapidly increased, until 21st, when they terminated

in death. From the beginning to the close of the disease the surface was bathed in perspiration.

The *autopsy* furnished no satisfactory evidence of the cause of death. The peritoneum was somewhat injected, but not decidedly inflamed. Both thoracic and abdominal organs were healthy. In a word, there was no trace of active disease in any of the viscera or tissues. Was this a case of pure blood poison? If so, were the morbid products transmitted to the fœtus with the above results?

Treatment.—The treatment in all the cases was commenced by clearing the bowels of their curdy and green contents. The stomatitis suggested the use of chlorate of potassa, and the feebleness the gentle use of stimulants. Quinine, iron, carbolic acid, etc., were given without confidence being established in the efficacy of either.

Probable cause.—No hospital could be better constructed for light and ventilation than the Cincinnati Hospital. Built in the pavilion style, each pavilion being, in one sense, independent of the rest, secures for it an immunity from those diseases which extend their influence to surrounding patients in hospitals compactly built. The question is, in which ward is there most cleanliness and painstaking?—the perfection of each leaving the question unanswered. Still, emanations of an unexpected and pernicious character will sometimes occur, to be felt rather than seen.

From the favorable hygienic condition of the hospital it has seemed impossible for any disease to be generated within its walls. There can be no cause assigned, however, for the production of the strange disease among infants, except that of local origin. What is the poison, and whence comes it? The female surgical ward has been located under the obstetrical. The mortuary has been so near as to send its odors, at times, where they were not desired. Suspicion has rested on these localities. The remedy is being applied, and we await hopefully the result.

After the above was written, the following cases occurred, and, notwithstanding they present no new features in the main, their termination, with one exception, is gratifying; they are, therefore, subjoined.

M. R. gave birth to a healthy female infant May 23d, 1875. One week subsequently the mouth became aphthous. The next day the entire body was dingy; nursed well; urine and stools were natural. 31st. Discoloration of skin deepened; urine dark, leaving

black deposit on napkins. These symptoms, with slight variations, continued until June 5th, when a decided improvement was perceptible.

14th. Discharged cured.

The next child (male) was born May 25th, with every indication of good health. June 2d. Aphthæ with the usual prominent symptoms appeared, and continued until the 5th, when the urine became natural, and the skin white. On the 7th it died. Nothing abnormal was observed except a blackened condition of the apices in the kidneys.

Infant A. (male) was born May 29th, to all appearance healthy. Two days following, the mouth became aphthous. June 2d. The skin was yellow and the eyes greenish, the color of the former gradually changing until the 7th, when it became very dark. Then the color began to fade, and in forty hours it had disappeared. On the 9th there was a large amount of black deposit in the urine. From this time a general improvement was manifest, and now, June 16th, it is seemingly well.

Infant L. (male), healthy, was born May 30th, 1875. June 3d. Mouth aphthous; sclerotics greenish-yellow. 7th. Skin has a decidedly brownish tinge. 12th. Urine dark, with black deposit; semi-comatose. 13th. The chest and extremities covered with a red rash. Temperature 101½°. 14th. Condition of child greatly improved. 17th. Appears well. This is the only case in which the temperature was above 99°.

The mother of this child had puerperal fever, while the other three mothers were free from post-partum trouble.

Tincture of iron was administered in these cases from the beginning to the close of morbid phenomena.

I now leave my cases, with all their singularity, to the consideration of those who are given to plausible speculation as well as a wise application of facts.

The above four cases were speedily followed by three others, two of which have been fatal. The remedy, to which much credit was given in the cure of the former cases, effected no favorable change in these.

Infant C. (male), born June 8th, 1875. 11th. Sclerotics slightly tinged; buccal membrane reddened; saliva frothy between the lips. 15th. Mouth white, with curdy exudation; lips livid. 19th. A. M., general surface dingy; P. M., is now dark brown; urine

dark with black deposit. 21st. Died. No autopsy. The mother had a favorable convalescence.

Infant R. (male), born June 11th, 1875, was healthy until June 16th, when the eyes became tinged and the mouth frothy and curdy. The entire surface is discolored. 19th. Urine dark with black granular deposit. The first discharge of granules was in a mass weighing 6¾ grains, besides a considerable portion adhered to the napkin. 21st. Died.

Autopsy by Dr. Dandridge.—Lungs and heart normal; left ventricle contains a soft clot; liver large but normal in appearance; spleen natural; umbilical vein contained a coagulum; *kidneys* considerably enlarged, substance unusually dark; the line of demarcation between cortical and tubular portions not apparent. *Pelves* and *calices* completely filled with a slate-colored mass, which *in situ* is moist, but on exposure soon becomes dry and readily powdered. When moist it has the consistency of semi-organized fibrin. The pyramids are filled with the same granular substance.

The *bladder* is greatly distended with coffee-colored urine. Besides it contained a black substance of clayey consistence, moulded to the shape of the bladder, and when removed entire measured over an inch in diameter.

In all the cases the order of symptoms was as follows: Sclerotics tinged greenish-yellow; frothy saliva between the lips; more or less aphthæ; discoloration of skin; coffee-colored urine, with black granular deposit; inability or unwillingness to nurse, varying as to time in different cases.

For purposes of investigation the mother's blood was taken from a vein in the arm. It was not subjected to any chemical tests, but nothing unnatural could be detected by the microscope, nor was there anything abnormal in the blood of the child obtained by scarifications from the arm. A thin layer of skin taken from the heel presented the following appearances, the examination being made by Dr. Carson. "One-half of the connective tissue of the section in view is of a purple, deepening into a blackish shade, and distinctly separated from the other half, which is of a pale buff color. There is no granular deposit in either half of the section."

CHEMICAL LABORATORY OF MIAMI MEDICAL COLLEGE,
CINCINNATI, O., July 22, 1875.

PROF. M. B. WRIGHT, M.D.

Dear Sir: The specimens of *pigmentary deposit* sent me have been submitted to careful chemical analysis, with the following results so far as the work has been carried out. Owing to the hurried demand for a report for publication along with your paper on "Pigmentation Cases," my work has been necessarily more hurried than the interesting nature of the subject demands. Further researches are in progress, the results of which will be made known in due time.

The specimens received were from four different cases: the first, a dried deposit from urine passed at one time; quantity 6¾ grains. The second and third specimens were taken from the kidneys of separate cases, and the fourth from a large deposit nearly filling the bladder of another patient.

The different specimens were found to possess as nearly the same chemical properties as so many different samples of normal blood or urine. The ultimate analysis given below is the average of two analyses, the first from the mixed matter of the first, second, and third cases, and the other from the fourth case.

The deposit in its moist state, and after preservation in alcohol, has very much the appearance and consistence of liver. In its dried state it is quite black and *exceedingly hard*, and very difficult to fracture or pulverize.

It is slightly granular in its moist state, but structureless when dried.

	Moist.	Dry.
Specific gravity	1.055	1.22.

It will be observed that the gravity of the moist substance agrees with that of normal blood.

It differs in its chemical relations and composition from any substance with which I am acquainted, bearing, however, *some* resemblance to *melanin*, the black pigment of the eye; on this account I propose for it the provisional name of *melanoidin*.

100 parts of the moist mass dried at 212° F. give 34.5 parts of dry pigment.

100 parts dry pigment contain—

	Parts.
Matter volatile at a red heat	80.00
Fixed carbon	12.5
Earthy ash	7.5

The ash, moistened with chlorhydric acid and tested with potassic ferrocyanide, reveals very distinctly the presence of iron.

The ultimate analysis of 100 parts of the dried pigment gave—

	Parts.
Carbon	33.564
Hydrogen	5.983
Nitrogen	15.58
Oxygen and inorganic matter	44.873
	100

The quantity of oxygen present is very close to 40 per cent. The ash has not yet been analyzed, nor has the presence of *sulphur* and *phosphorus* been verified.

The comparative composition of 100 parts of this substance and melanin, disregarding the inorganic matter, is here shown—

	Melanin.	Melanoidin.
Carbon	51.8	33.6
Hydrogen	5.4	5.9
Nitrogen	13.4	15.6
Oxygen	29.4	44.9

Thus melanoidin differs from melanin mainly in containing less carbon and more oxygen, that is, it is not so highly vitalized in its composition, and we know that while melanin is a physiological product, our pigment is a pathological one. Compared with urea and uric acid, which contain—

	Urea.	Uric acid.
Carbon	20 per ct.	40 per ct.
Hydrogen	7 "	3 "
Nitrogen	46 "	37 "
Oxygen	27 "	20 "
	100	100

we find our pigment much lower in the scale of organic material than either.

The statement has been ventured that this deposit is nothing but "*modified hæmatin*," or, speaking in a manner more safely indefinite, "*altered blood*." Now aside from the fact that we have no satisfactory evidence that hæmatin ever exists *ready formed* in the blood of vertebrates, the composition of this product, as well as that of other parts and products of the blood, must necessarily preclude any such ventures of opinion, as the following figures (discarding fractions) will show:—

	C.	H.	N.	O.	Other constituents.
Hæmatin	64	5	10	12	9
Serum albumen	54	7	16	19	4
Fibrin	53	7	16	21	3
Hæmoglobin	53	7	16	23	2
Melanoidin	33	6	16	44	[1]

Properties.—In its deportment with reagents, melanoidin bears considerable resemblance to melanin. It is insoluble in water, alcohol, ether, chloroform, glycerine, and the dilute mineral acids, as well as in saline solutions generally. It is quickly decomposed and dissolved in strong nitric acid, but insoluble in dilute sulphuric acid with alcohol; solution of potash dissolves it with liberation of ammonia; soluble in sodic hydrate, and also to some extent in cold, strong aqua ammoniæ; dilute aqua ammoniæ softens the dried mass to a soft readily compressible, jelly-like consistence suitable for microscopic study, in which condition a few blood-disks have been observed. These, as well as a few epithelial scales that have also been found, are no doubt accidentally present. Solutions of the alkaline carbonates do not dissolve it to any considerable extent. Strong, hot solutions of the alkaline chlorides exert a slight bleaching and disintegrating effect, but do not dissolve it appreciably. Solution of chlorate of potassa has the same effect to a more marked extent. Solution of chlorate of potassa with chlorhydric acid (producing liberation of *euchlorine*) quickly bleaches it to a *pearly whiteness*, and slowly dissolves the greater portion of it. Long-continued treatment with euchlorine effects its complete decomposition and solution. Unlike melanin, it is not precipitated from its potash solution by chlorhydric acid. Insoluble in fixed and volatile oils. Insoluble in solution of urea and in bisulphide of carbon.

Microscopic and Spectroscopic Appearances.—Sections of pigmented skin and a potassic solution of dried pigment (from case 1st) have been submitted, the former to microscopic and the latter to spectroscopic examination, with the following results.

The integument was first dried to a degree sufficient to make the cutting of sections an easy operation, and sections then made perpendicular to the surface of the skin. The pigment, which was deposited mainly in the cutis vera, was found in minute granules of almost constant size, namely $\frac{1}{5\,6\,0\,0}$ of an inch in diameter, and roughly spherical in form. It seemed to pervade, alike, any and all parts of the true skin, being, however, most plentiful in the

[1] Not determined.

middle portions. Glycerin, and also dilute aqua ammoniæ, render it almost invisible by giving it a light-brown transparency difficultly distinguishable from the skin itself. When thus treated the granules swell up and coalesce, without, however, showing any evidence of their ever having been blood disks. The appearance of the deposit as thus seen is very different from ordinary extravasations. It is very desirable that the identity of the pigmentary matter of the skin and that from the kidneys and bladder be carefully tested. From the very little that has been determined it would seem that the renal and vesical deposit is less soluble than that of the skin.

The spectrum of melanoidin differs essentially from that of blood or any of its separate proximate elements, either recent or dried; for, while the absorption bands of hæmaglobin are located near the D line, and near the yellow border of the green in arterial, and between the yellow and the green in venous blood, and while the spectrum of oxidized hæmatin with its three bands, and that of the deoxidized compound with its two bands, are distributed also over the same region of the spectrum, but occupying a greater extent, we find, in the case of melanoidin, *no* absorption near the red end, and *no light* transmitted beyond the yellow. So that the spectrum of melanoidin is simply a band of red bordered with yellow light.

Its very limited range of solubility affords but little promise of successful treatment of the cases in which it occurs. The fixed alkalies and their chlorides and chlorates, assisted by chlorhydric or nitric acid, or aqua regia, may act beneficially if they can be administered in sufficient quantity. Ferruginous and other tonics, and perhaps stimulants also, may assist in preventing the formation of the deposit, but would not be likely to aid in its elimination after having been once formed.

Where is it formed? and by what influence? are questions of physiological chemistry that must be answered, if at all, after patient and thorough investigation, both chemically and microscopically, of all parts of the circulation and excretory system. From what has been learned, it is probably safe to say, that, if it be not a cryptogamic growth, it has its origin (in a soluble form) *before* it enters the urinary excretion, and that in entering the same, or before doing so, it passes into an insoluble form.

Respectfully,

J. B. HOUGH, M.D.,
Prof. Chemistry and Toxicology, Miami Medical College, Cin., O.

MINUTES OF THE SECTION

ON

SURGERY AND ANATOMY.

MINUTES OF THE SECTION

ON

SURGERY AND ANATOMY.

MAY 4, 1875.

THE Section was organized by electing, on motion of Dr. L. A. SAYRE, of New York, Dr. Paul F. Eve, of Tennessee, as Chairman *pro tem.*, and Dr. S. N. Benham, of Pennsylvania, Secretary *pro tem.*

The first paper presented and read was by Dr. E. ANDREWS, of Illinois. Title, *Some Results of Operative Surgery.*

Dr. L. A. SAYRE, of New York, said: I am very happy to see, in the paper just read by Dr. ANDREWS, that he has by accurate observations taken an opportunity to rectify the mistaken ideas of many persons throughout the country in respect to the infectious condition of our large hospitals, and to correct the prevailing impression that on account of this poisonous condition these hospitals should be destroyed and new ones erected in their place.

The observations of Dr. Andrews prove that we have it in our power to correct this infectious state without any necessity of tearing down the hospitals themselves. All that is requisite to accomplish this object is to force the chemical antidote by means of pressure into the same pores through which the poisonous gases passed, and thus neutralize their evil influence. Having effected this, silicate the walls and ceilings, and you make the old hospitals as pure and free from pyæmia as if they were new.

On motion the paper was referred to the Committee of Publication.

The second paper was presented by Dr. LEWIS A. SAYRE, of New York. Title, *Partial Paralysis and want of Co-ordination, from Genital Irritation.*

Dr. ———. I wish to inquire of Dr. Sayre what difference there is between the symptoms he has just related as occurring in cases of paralysis due to phimosis, and the symptoms presenting in infantile paralysis?

Dr. SAYRE. That is just the question I want explained, and the query is, are not a great many of these cases of infantile paralysis due to some undiscoverable or overlooked reflex irritation? I have not had my attention called to this subject until comparatively recently, and have not had the time to investigate it as I should like; but only a few days before I left New York I had a case sent me by Dr. E. D. Morgan, of a child, 4 years old, totally paralyzed in the lower extremities, and unable to stand without support, and which, upon examination, was found to have adherent prepuce. The operation of circumcision was performed, and in three days after the operation, the child walked. The curious part of this case is, the quick recovery of the child after the source of irritation was removed.

Dr. J. B. MURDOCK, of Pennsylvania. I have been very much pleased with and interested in the remarks of Dr. Sayre, but it has occurred to me to ask him how he could know when an elongated prepuce was likely to produce this reflex irritation? It is my experience to find this condition existing normally in a very large number of male children, under two years of age, without any of the symptoms of reflex irritation coexisting. I do not wish to call in question the cases which Dr. Sayre has narrated, as there can be no doubt of their cause and effect, but if the long prepuce in infants is capable of producing paralysis, it is a wonder the disease is not more frequent.

I have, also, observed that phimosis is often a physiological condition in the young male child, and even with some adhesion. I have known this condition to exist in cases in which there was no interference, and in time the prepuce retracted naturally.

Dr. SAYRE. There is an agglutination, and there is an adhesion; two totally different conditions, one perhaps physiological and the other pathological. In either the secretions of these parts are imprisoned; thus, acting as a foreign body, they set up an irritation and active inflammation. This secretion can be found in hardened triangular masses, like the putty from a window pane, back of the corona, and, like a chestnut-burr in the rectum, produces an engorgement from a constant irritation, and resulting in a continual erection, and affecting the entire system the same as in excessive venery. I do not say that phimosis produces paralysis, but that paralysis is the effect of this continual priapism.

Dr. WEBB, of Michigan. I wish to inquire if Dr. Sayre ever knew of a case of adhesion of the prepuce in which paralysis did not occur.

Dr. SAYRE. There are most probably a great many such cases in which this condition exists without the paralytic symptoms manifesting themselves. In the case of the old man alluded to in the paper, the phimosis existed many years before a marked result was produced on the system at large.

Dr. J. R. BRONSON, of Massachusetts. Is there not a physiological agglutination and a pathological adhesion?

Dr. SAYRE. That covers the point exactly. All these cases I have related were pathological and not physiological, and in many of them the tissues forming the prepuce had degenerated into a circular fibro-cartilaginous band, which offered the utmost resistance to its division with the knife.

Dr. J. M. KELLER, of Kentucky. I would like to ask if Dr. Sayre ever knew of this condition which he has described existing in Hebrews?

Dr. SAYRE. Never.

Dr. LEACH, of Indiana. Does this condition of the penis exist in adults affected with club-feet?

Dr. SAYRE. Well, I don't know. I never examined the penis of an adult with club-feet, nor do I desire to be understood as saying that all cases of club-feet are due to phimosis.

Dr. L. ELSBERG, of New York. I would like to ask Dr. Sayre if it is not his desire that the paper should remain with him for revision before leaving it in the hands of the Committee of Publication. This is suggested by several passages in the paper showing that it was, at the time it was written, not intended for publication.

Dr. SAYRE. I am very much obliged to Dr. Elsberg, and am surprised at his divining my own thoughts upon this matter. The paper was written in haste for the New York Society of Neurology and Electrology, and was presented here merely for discussion, and, with the addition of the views of the Association, it was my intention to ask the privilege of revising and completing it.

Dr. BRONSON, of Massachusetts, made a remark which was construed by Dr. Elsberg as conferring upon members the privilege of making material alterations in a paper after reading before the Association and before publication in the Transactions. This gave rise to considerable discussion, and it was finally ruled by the Chairman of the Section, Paul F. Eve, that it was improper and contrary to the custom of the Association to allow of *material* alterations in manuscript after being read before the members

assembled, but that for mere revision such a request could be consistently granted.

On motion the paper was referred to the Committee of Publication.

On motion of Dr. KELLY, of Kentucky, Dr. Sayre was allowed a sufficient length of time to revise the paper before submitting it to the Committee of Publication.

The next was a paper read by Dr. C. B. KING, of Pennsylvania. Title, *Operation for Extrophy of the Bladder.*

Dr. ANDREWS, of Illinois. I would like to ask the gentleman, what is to become of this boy when he arrives at the age of puberty, and this integument which has been taken from the pubes and placed so as to serve for the inner lining of the bladder is covered with hair? In my opinion it may give him a great deal more trouble in the future than would his former condition. It may do very well for the boy, but I think not one here would be willing to perform such an operation.

Dr. KING, of Pennsylvania. The trouble which Dr. Andrews thinks is liable to follow this operation, *i. e.*, irritation of the bladder, is obviated by the urine acting as a depilatory. Dr. Pancoast, of Philadelphia, to whom belongs the honor of first performing this operation, and Dr. Wood, of London, both hold this view.

Dr. JAMES R. WOOD, of New York. I am delighted with the result which my friend Dr. King has reported. I have seen the cases of my namesake in London, and they are not more favorable than this. As far as the accumulation of hair is concerned there is no trouble to be feared. I know objections have been made by many surgeons to the operation, but the comfort accruing to the patient is beyond description, and this, together with previous successes, should warrant its being performed. An operation which I performed some time ago resulted very favorably, and in every case where the operation has been performed by intelligent surgeons it has proven successful; the result being hailed both by surgeon and patient with delight. You all know the success of the somewhat similar operation for vesico-vaginal fistula as performed by Dr. Sims, of New York, to whom womankind is so much indebted, and it is to the young men of our profession, Mr. Chairman, we must look to perform these operations. They require study, thought, and labor, which the older men of the profession have either not the time, or are not willing to bestow. There are poor wretches to-day travelling over this country with protruding blad-

ders, exhibiting themselves to the medical classes and eking out a most miserable existence; and these men are not operated upon, simply because you and I, and others, have not the time or inclination to qualify ourselves to do it. Mr. Wood, of London, is doing all of this kind of work in England, and I hope my young friend, Dr. King, will do it all in this country.

On motion the paper was referred to the Committee of Publication.

On motion the Section adjourned until Wednesday at 3 P.M.

WEDNESDAY, May 5.

The Chairman, Dr. E. M. MOORE, of New York, presided. Dr. S. N. BENHAM acted as Secretary *pro tem.*

Dr. L. I. WILLIEN, of Indiana, presented a paper on *Hydro-Nephritis with Renal Calculi*, with specimen.

Dr. E. ANDREWS, of Illinois. This class of cases has been the subject of the operation of cystotomy, opening from the back, and I think it is a question whether this opening should not be free enough to reach down with a long curved pair of forceps and thus extract the calculi.

Dr. A. GARCELON, of Maine. I think that the operation suggested by Dr. Andrews, of introducing forceps to extract a calculus, would be a "wild-goose chase," where one was developed in the pelvis of the kidney. But what seems most remarkable in these cases is, the rapid development of calcareous material, as the time was so short between the manifestations of the symptoms and the receipt of the injury. I hold in my hand a specimen of calculus, taken from the bladder of a child two years old, the first symptoms referable to which occurring only about seven or eight months previous to death. And here is another specimen which developed very rapidly in an adult.

In my country the development of calculi is of very rare occurrence, as in all my experience I have met with very few cases.

Dr. N. C. HUSTED, of New York. I would like to ask if a diagnosis of renal calculi was made by Dr. Willien at the time of puncturing the cyst?

Dr. WILLIEN. No, sir; I did not.

BY A MEMBER. Was not the formation of this calculus due to the railroad accident mentioned in the paper, and therefore not of a rapid growth, as Dr. Garcelon supposes?

Dr. GARCELON. The evidence as derived from the symptoms of

the case does not show a very extended period of development. Of course, this cannot be ascertained definitely, but it is well to know, Mr. President, that injury of the spinal cord predisposes to the formation of calculi. There is a case which I reported, in which 115 calculi were removed from a patient who had suffered an injury to the spinal column. This patient was again operated upon, and fifty-eight stones removed; and again, during the war, I performed the third operation, when eighteen or nineteen calculi were secured. The point I wish to make, Mr. President, is that injury of the spinal cord predisposes to the formation of calculi.

On motion the paper was referred to the Committee of Publication.

The next paper read was by Dr. C. DENNISON, of Colorado. Title, *A New Extensor Apparatus*, with blackboard illustrations; remarks were made by Drs. KELLER of Kentucky, GARCELON of Maine, *et al.* On motion of Dr. J. R. BRONSON of Massachussetts, a vote of thanks was given to Dr. Dennison for his paper.

Dr. L. ELSBERG, of New York, read a paper on *Œsophageal Auscultation*. On motion it was referred to the Committee of Publication with request to publish.

The report by Drs. GROSS, SIMS, and TONER was made the special subject for discussion at 3 o'clock P. M. to morrow, May 6th.

Adjourned.

THURSDAY, May 6.

Dr. MOORE in the chair.

Dr. J. M. KELLER, of Kentucky. It is somewhat out of the regular order of business of this Section, Mr. President, but as the importance of the subject demands it, I would like to call attention to the report on the paper of Dr. Gross respecting syphilis, which was read, as you all recollect, before this Society one year ago.

After it was read, a committee was appointed to devise a plan for disseminating the ideas of that paper throughout the profession and country. I do not know what the action of that committee is, but hope to learn to-morrow; however, I understand that the report of the committee, composed of Drs. Morris, Sands, Toner, and Gross, on this paper, was yesterday referred to the Committee of Publication.

The object of my calling this to the attention of the Association again is for the purpose of bringing this subject not only before

the Section, but before the nation for legislative action, and I trust that this Section will reconsider its action and empower its author, Dr. Gross, to have it produced in the form of a monograph for the purpose of distribution to delegates from every State in the Union, in order to more fully and certainly secure appropriate legislation, which a knowledge of the importance of the subject will command, and I hope that some gentleman will make a motion, so that it will come from the Section on Surgery, asking that the Association extend to Dr. Gross the privilege of preparing this proposed monograph for the object of influencing legislation in the different States upon the subject.

The PRESIDENT. Do I understand you to make a motion to the above effect?

Dr. KELLER. No, sir; my friend Dr. Sayre was to make this motion, but, as his modesty may be in the way (he is noted for that quality), I will here make a motion that this Section on Surgery request that the American Medical Association will ask Dr. Gross to prepare his paper on syphilis in monograph form, in order to disseminate the views therein contained, the object being to furnish the sub-committee of the different States data to influence and secure legislation on this subject.

The PRESIDENT. I can hardly think that such a motion would be exactly in order. This paper is no longer the property of Prof. Gross, and it is the duty of this Association to publish it or not, as it sees fit. Of course, if Dr. Gross desires to make any alterations, there would certainly be no objection.

Dr. J. R. BRONSON, of Massachusetts. Dr. Sayre says that he yesterday moved that the report be referred to the Committee of Publication without its being read. I am very glad if it be true, as the Section will have an opportunity of hearing the report read if it be recalled.

The PRESIDENT. Do you call for the reading of the report?

Dr. KELLER. Yes, sir; I do.

The PRESIDENT. Do you ask it to be read now or to-morrow?

Dr. KELLER. I don't care when it is read; I don't want it smothered.

Dr. A. GARCELON, of Maine. I am sure I watched the proceedings yesterday with a great deal of care, but this is the first time I have heard anything about the report.

Dr. SAYRE. I would request that the stenographer, Mr. George, be asked in respect to the matter.

Mr. GEORGE. The motion may have been made, but I have no recollection of it.

THE PRESIDENT. There seems to be a great deal of confusion of ideas on this subject. Was this—

Dr. KELLER. Dr. Sayre can explain it.

Dr. SAYRE. All I know about this matter, gentlemen, is as follows: First, that a committee composed of Drs. Morris, Sims, Sands, Toner, and Gross was appointed last year to report upon the paper of Dr. Gross on syphilis. That yesterday Dr. Morris sat behind me with a large report, at least it so appeared, which he said was the report of the Committee on Prof. Gross' paper of last year. He said it was prepared for the purpose of affecting legislation, and asked me to move its adoption by the Committee of Publication. Believing at the time that the report had been made by Drs. Sims, Sands, Morris, Toner, and Gross, and having the utmost confidence in these gentlemen, I made the motion that the report be so referred; and now what is wanted is a reconsideration of that motion, and I move for a reconsideration of my motion of yesterday, and to recall this report from the Committee and have it made the special order for to-morrow. Carried.

BY A MEMBER. I move that it be made the special order after the paper of Dr. Sims.

Dr. E. RICHARDSON, of Kentucky. I do not know as there will be time, as the Association has an invitation.

Dr. SAYRE. Mr. President and gentlemen, you all know I am as fond of fun and as full of sociability as any man on the face of the earth, but a few years since we nearly destroyed this Association by allowing our social proclivities to prevail. Our friends here in Louisville are so hospitable and generous, it is hard to resist their kindness, but we must put some stop to this, and not allow these allurements to interfere with a single one of our duties here as delegates.

The PRESIDENT. The report will come up to-morrow in the regular order after Dr. Sims's paper is read. A motion for adjournment is in order.

Adjourned until Thursday at 3 P. M.

MAY 6, 3 P. M.

The Section was called to order at 3 P. M. by the Chairman, Dr. Moore, of New York.

Dr. J. MARION SIMS, of New York, spoke a few words in regard

to the actual cautery, and exhibited a self-acting blowpipe or alcohol blast lamp, which he had found an extremely convenient and rapid means for heating the cautery irons. The irons are placed in a rack made of stone, and so adjusted as to receive the greatest amount of heat. By the use of the lamp, a small iron can be heated in one minute, larger ones in proportion. The doctor referred to the use of the actual cautery in ovariotomy, and thought that its use would become more and more extended. In a *post-mortem*, which the doctor had made in a case dead from ovariotomy, he found that the burnt surface had healed by first intention to the serous tissues with which it was in contact, so that there was no reason why it could not be used in the operation of ovariotomy.

The alcohol being impure, the result of the experiment of heating the irons was not as satisfactory as the doctor desired, but it served to illustrate the method proposed.

No action was taken respecting the paper further than tendering the doctor a unanimous vote of thanks, he having prefaced his remarks by stating that the instrument had been shown at the New York State Medical Society the month previous.

Dr. E. H. M. SELL obtained permission from the Chair to read a paper entitled: *Tapping of a True Ovarian Cyst followed by a Cure.*

Dr. SELL. Before reading this paper, I would like to say that the case was last year presented at Detroit, and that a brief history of it will be found on pages 245–6 of the American Medical Association's Transactions for 1874. She has been seen by many persons, and was last year considered a very interesting case. The diagnoses were various and contradictory, and I was advised by the Association last year to bring in the *post-mortem*, as the patient would, no doubt, be dead in three months, but, gentlemen, instead of bringing the *post-mortem*, I have the pleasure of presenting to you the patient herself.

The paper being read, it was on motion referred to the Committee of Publication.

Dr. HOLLOWAY, of Kentucky, presented to the Section *Seguin's Thermoscope*, and said: An apology is due from me to Dr. Sayre for presenting this instrument in this irregular manner. It should have gone to the Association in its general meeting and then be referred here, but it was not received by Dr. Sayre until to-day at one o'clock.

It is a simple instrument, consisting merely of a glass tube

twelve inches long, bulbous at one extremity and open at the other. The bulb is placed in hot water, which rarefies the air within the instrument, when, by inverting it in a glass of cold water, a drop of water is forced up the tube, and the instrument is completed and ready for use.

To illustrate its value in a diagnostic point, I desire to briefly allude to a case, which I have just seen, where it proved an efficient aid.

Quite a prominent physician of this city (Louisville), fell some two weeks since, hurting the knee, which has occasioned him considerable trouble since on account of the pain, no other inflammatory symptoms, however, being manifest. This pain was restricted to a very small spot over the internal lateral ligament, the seat of the injury. After making a very careful examination, Dr. Sayre decided that there was rupture of a few of the fibres of the internal lateral ligament. The question of treatment hinged upon, whether there was inflammation at this point, and by this instrument the information was secured. The normal temperature at a corresponding spot on the unaffected knee was obtained, and then transferring the thermoscope to the injured knee, the water rose ($1\frac{3}{4}^{\circ}$) one and three-fourths degrees in two seconds, thus solving the problem, giving us the evidence of heat, which could not be obtained by the sense of touch.

A vote of thanks was tendered Dr. Holloway.

Dr. E. H. M. SELL, of New York, desired to present again the patient whom he had brought before the Surgical Section at Detroit, as the case had elicited more than ordinary interest.

Among those who had then expressed an opinion upon the diagnosis and prognosis, expressions were as diversified as they had been among the European doctors, from tertiary syphilis to cancer and from a perfect cure to death within three months.

Some predicted, that the two soft tumors would soon become hard as the third one, others were equally certain that the tumors were cancerous and would rapidly enlarge, suppurate, and destroy life, while still others did not venture to express an opinion.

Professor DAVIS, of Chicago, having examined the patient at his office, agreed with us, that it was some obscure purulent disease, analogous to, yet not syphilis.

The doctor had before met with a few similar cases, and was disposed to make a favorable prognosis.

As several had specially requested us to report the result of the

post-mortem, we take pleasure to present the patient once more *alive*, and in every respect improved, though not yet entirely well.

The soft tumor over the left parietal bone has disappeared entirely, the hard one of the forearm almost, and the large soft tumor, situated a little above the one just mentioned, has also entirely disappeared.

This one we punctured with a hypodermic syringe, and the microscope revealed the presence of blood and pus. Only for the puncture, this tumor also would doubtless have disappeared without suppurating, but being once punctured it discharged an immense quantity of matter.

The patient has gained about twenty pounds, and most of the symptoms have either very much improved or entirely disappeared. Vertigo is scarcely if ever present, nor does looking up now produce dizziness.

The patient is much stronger; four hours walking scarcely tires him, and reading, writing, and thinking no longer fatigue or confuse him, unless he indulges in them too much at a time.

The following has been some of the treatment adapted to the symptoms as they presented themselves.

As a *general alterative:* ℞. Sodii iodidi, dr. iij; hydrg. bichlor. gr. j; ex. conii fl. dr. vj; ex. stillingiæ fl. oz. iss; syr. cort. prun. virgin. fl. oz. ij. M. S. A teaspoonful three times a day.

Later in the treatment the bichloride was omitted, when the effect of the remedy was even more marked.

As a *resolvent of uric acid* and as a cholagogue: ℞. Magnes. sulphat., sod. sulphat., āā dr. ij; ex. anthemid. nob. fl., ex. eupatorii perfol. fl., āā fl. dr. ij; aq. menth. pip. fl. oz. iss. M. S. Teaspoonful every three hours.

As a *capillary tonic, hæmatic,* and with a *specific effect* upon a chronic inflammation of the neck of the bladder: ℞. Tr. ferri chloridi insipidi. fl. dr. vj; tr. cantharides fl. dr. ij. M. S. Gtt. x ad gtt. xxx three times a day, after meals.

As a *laxative,* one or two of the following pills at night: ℞. Podophyllin, ext. bell., āā gr. iv; nuc. vom., ex. hyoscyami, pulv. capsici, āā gr. x. M. et div. in pil. No. xl.

As a *general tonic* and *diffusive stimulant,* with *laxative* effect: ℞. Podophyllin, ex. bell., āā gr. iij; ex. nuc. vom., ex. hyoscyami, pulv. capsici, āā gr. vij; xanthoxylin, ferri sulphat., āā ℈iss; acidi arseniosi, strychniæ, āā gr. ss. M. et ft. pil. No. xxx. S. One pill three times a day.

For *flatulency* and *dyspepsia:* ℞. Tr. nuc. vom. fl. dr. ss; tr. capsici, ♏xv; acid. nitro-mur. dilut. fl. dr. iij; tr. gentian. co. fl. oz. iij. M. S. One teaspoonful after each meal in water.

For *catarrhal diarrhœa:* ℞. Ol. ricini, fl. dr. iv; pulv. acaciæ, dr. ij; ex. hyoscyami, gr. x; con. tr. gelsem. gtt. xxiv; aq. menth. pip. fl. oz. iv. M. et ft. emulsionem. S. A tablespoonful after each motion.

For *insomnia:* ℞. Ex. cypriped. fl., ex. asclep. fl., ex. dracontii fl., ex. scutellariæ fl., āā.—S. Half a teaspoonful to one teaspoonful three times a day, or on retiring.

For *chronic cystitis:* ℞. Ex. buchu fl., ex. uvæ ursi fl., ex. senecio grac. fl., āā. M. S. From half to one teaspoonful three times a day.

For the same with an effect also upon the kidneys, liver, stomach, etc.: ℞. Ex. buchu fl., ex. uvæ ursi fl., ex. helonias fl., ex. eupator. pur. fl., āā dr. iv; ex. hydrastis fl. dr. iss; tr. gelsem. dr. j; septandrin dr. j. M. S. One-quarter to one-half a teaspoonful three times a day.

The bladder was washed out daily with a warm solution of potass. chlorat. by means of Dr. Potter's water-bag; and a catheter was used several times a day to draw off a residue of urine, which the patient failed to pass *per viam naturalis.*

The digestion of the patient was very much improved by using lactopeptine, one of the best remedies ever devised for indigestion, dyspepsia, etc.

The *compound strychnia pill,* as a *nerve tonic,* improved the memory, and ability to *read, write,* and *think* very materially.

In conclusion, we desire to make but this one remark, namely, should any one feel disposed hastily to conclude that the result of the treatment proved this case to have been syphilis, in spite of the absence of all primary or secondary symptoms in the patient, in any of the ancestors or offspring, we do not feel disposed to quarrel with him.

Those who have syphilis on the brain, and find almost every conceivable disease nothing but syphilis or the result of syphilis, may willingly hold their views, while we will hold ours, until further developments in medical science will prove beyond all dispute which view is true.

The CHAIR. We will now hear the report of the Committee on Dr. Gross' paper respecting syphilis.

Dr. MORRIS, of New York, read the report.

Dr. GROSS, of Pennsylvania, stating that it was drawn up by Dr. Morris.

Dr. ANDREWS, of Illinois. I would inquire if all the members of the Committee have signed this report?

Dr. MORRIS. It is either signed or has the tacit approval of every member of the Committee. Some of them have not had time to read it all over and sign. It has the approval of Dr. Gross, Dr. Sims—

Dr. ANDREWS. It is always proper to receive the report on motion.

The motion was put and the report received by the Section.

Dr. ANDREWS. The difficulties which hang over this subject are very great. Some years ago I gave the matter considerable attention, and the more attention I gave it the more the perplexities multiplied, and the more grave did the subject become. If I were prepared to say that I could enlighten this assembly upon the subject I would be inclined to make a long speech, but I simply desire to suggest that we be cautious in what we do. I remember at our last meeting that the honorable head of the Committee made some remarks liable to provoke severe criticism.

Allow me to call attention to some of the difficulties of the subject, as I desire that this body will not commit itself to anything hasty or precipitate, but to that which every member of the Section will be willing to stand to.

The efforts to attain the object desired in other countries have been directed in two different directions, viz., suppression and prevention. This, at first glance, may seem a very simple matter, but there are difficulties connected with it which have baffled the entire world. The first thing that confronts us is that the police of the most tyrannical country in the world (for certainly such was France under the reign of Louis Napoleon) confess that they were unable to abate but a very small fraction of the prostitution in Paris, although the laws were enforced rigidly wherever possible. As in Paris, so it was in Berlin.

Without stopping to go into details, I will simply state here that statistics show that the disease of syphilis increased in Great Britain after the Contagious Diseases Act went into operation.

The Chief of Police in Paris estimated that about one-seventh only of the prostitutes of that city were under his control. The Chief of Police of Berlin gives a similar account. I had considerable correspondence with the Chief of Police of Berlin upon this

subject, and he informed me of some of the difficulties which stood in the way of the execution of the law there. It is proper for us to know here, however, that European countries endeavored to keep these people under control, not so much to prevent the disease as to have this class under supervision. Among the reasons given in the above-mentioned correspondence for the failure of the law, was (1) These women love liberty and do not care to be under control, especially for more than a year or two, and in this way the registration falls off. Some have been simple enough to think, because of the registration growing small, that prostitution was becoming less. (2) The great mass of syphilis is not distributed by prostitutes, as is generally supposed, but throughout Berlin and other cities of Europe, as well as here, by washer-women, trades-women, etc., who spend their days in attending to business and their nights in something else; it is such people as these that spread syphilis.

Now, these women have more or less hold on respectability; they even marry and settle down to a virtuous life; others become disgusted with their course of life and withdraw from it, and thus large numbers reform from this semi-respectable mode of life, while a few of them become prostitutes. In Chicago, to-day, there are upwards of one thousand women who were formerly prostitutes but are now permanently reformed. Numbers of them are married, and many of them to husbands high in life, to some of the wealthiest citizens, who are aware of the previous life their wives led. These are the women who defy the laws, who are called clandestine prostitutes; the police know they are practising prostitution for gain, but what shall they say? what are the Committee going to do with them? They say they will register them as common prostitutes in order to put them under control. The Chief of Police of Berlin says that it is impossible to control these women. It is very easy to say what a person would do if he were chief of police, but once chief of police and he will find himself as powerless as his predecessors. These women have hope of a better life; many of them have intimate friends who know not of their practices; the people at large have not the remotest idea of their secret shame, and yet you say you will register them. The most despotic police in the world dare not lay their hands upon these women. The system is so extensive, and the interference in these cases would necessarily be so frequent, that it would raise such a howl of indignation as to shake to the very foundations any government

that dare attempt it. Besides, chiefs of police are men of sense—are human—and would not force these women into open prostitution. To enforce these laws in France has been a failure, and we cannot expect to do any better in this country, where the liberty of all classes is prized more highly than in France. It is this clandestine prostitution that carries the syphilis, and every one can readily perceive the inutility of trying to get this disease under control, when only one-seventh of this class of women can be brought under supervision.

There are some other objections, which, to physicians, need not so much explanation. In the first place, there is a carrying of syphilitic virus from man to man without the contamination of the female. It is perfectly well known that women may have illicit intercourse with men infected with disease and not contract it, but the contagium is left in the parts of the female to poison the next man that calls. She may be inspected to-day at eleven o'clock, when at one o'clock she will inoculate one man and at four another. The fact that these women are inspected does away with all fear of contracting disease, and hence removes a very great restraint upon vicious men; and, by taking these things into consideration, it will be seen that the inspection of prostitutes tends only to advertise the business and circulate syphilis.

As an evidence that men do fear disease and believe that inspection or police supervision protects from it, I will mention an incident that came under my own observation.

In the steamer in which I crossed the Atlantic there were four young men. In discussing the many ways in which they were to enjoy themselves across the water, they came to the conclusion that in London they would live an upright life, owing to the loose manner in which prostitution was there conducted, but that when they got to Paris they would let out a little, because the government there restricts prostitution and endeavors to keep it under control. So when they reached London they were very staid young men, but the moment Paris was reached they all went off on a wild frolic, each of them taking a lover, and the result was to my own certain knowledge that one of them contracted syphilis, and to this day is frequently reminded of his escapade in Paris, but cannot understand why he should get syphilis in a city where prostitutes were kept clean.

In addition to the above, as before intimated, there is a great ocean of private licentiousness with which no police in the world

dare meddle. It rolls on unceasingly, creating and spreading its disastrous effects over the entire earth, and the few ladlefuls dipped out here and there from this immense caldron of vice and disease, make no impression whatever.

Now, if the results of these efforts have been so unfortunate elsewhere, why should we go on repeating them here? If you will look over the statistics you will find that the diminution of the first registry is interpreted as a diminution of licentiousness. For instance, the St. Louis Chief of Police thinks he has reformed half of that city. This can be told to the marines! If some forty European cities be taken and classified, a portion under these regulations and others free from them, it will be found that there are sixteen per cent. more prostitutes in those which have had license laws than in those cities which have been exempt from them. True, this may be accounted for, in a measure, by saying, of those cities in which prostitution was licensed, that the inhabitants were more depraved, but still, it shows that, as far as diminishing disease was concerned, license laws were a lamentable failure. The general hospitals of those European cities which had the license system show a small per cent. more disease than those that were under no regulations. This system of espionage, as the Chief of Police of Berlin says, appears very simple at first glance, but is found to be a very different thing in its execution, so that the result of the license system has been merely a delusive advertisement, people thinking that they were more protected from the virus than the facts would warrant.

I hope, therefore, that we will be cautious, and, while I am willing to vote for some reasonable measures to be adopted for the purpose of carrying on improvements in this matter, I shall *not* be willing to vote for anything like a free copy of the "British Contagious Diseases Act," or the French or Prussian systems.

These plans have failed in Europe, and will prove still greater failures here where the police have not such despotic power. I believe that any attempt to accomplish a material diminution of the diseases of the public body through attention to legislation will prove a total failure; that the improvement must take place *pari passu;* and I regret that any impression should go abroad that prostitution is by us thought worthy of being encouraged by law. I do not believe such a result was intended by the honorable committee, but such would be the result did we interfere in this matter in the manner proposed.

Dr. BRONSON, of Massachusetts. It seems to me that the remarks of Prof. Andrews cover largely the views designed to be presented in opposition to legislation upon this subject. I feel that he strikes the key-note when he says that syphilis is propagated, in the great majority of instances, not by women who make prostitution alone a business, but by women who have some other visible means of support as well, and who are patronized by clerks and the better class of mechanics and apprentices. This is the class of women who distribute this disease. I do not believe there is a city or town in the United States of 10,000 inhabitants or under, that has a prostitute walking the streets in the plying of her trade; nor do I believe that any community of this size would tolerate a prostitute who publicly announced herself to be such; nor in these towns or cities do I believe there is a single house of ill-fame known as such and where prostitutes are kept and paid for plying their avocation.

Now if this proposition be sound, is it not true that this disease is disseminated from a source which legislation will not reach? for, however rigid the law, it must be applied to persons who have inherent rights which no government dare interfere with. Certainly, if prostitution could be confined to those who make it a business, I would not object to asking our legislatures to give us some law looking towards the diminution of disease, a law which was imperative and which would be gratifying to us as physicians and citizens; but, in view of the facts presented to us by Prof. Andrews, there is a large class of people who could not be brought under the pressure of any legislation. I believe, sir, that the elevation of our morals will do more than suppression. I do not believe in creating a statute which, from its inapplicability, will prove a failure, and I hope, therefore, that unless the committee can recommend specific action which will embrace sentiments in accord with the moral sentiments of the country, something tangi ble upon which we can build, we will not take any action.

Dr. CHAMBERS, of Illinois. During the war, gentlemen, I had considerable experience in these matters, having been a surgeon in the army, with control of the prostitutes in Tennessee, and, I must add, that many of the remarks of Prof. Andrews are correct according to my experience. It occurs to me in the first place, however, that Dr. Gross had great courage in bringing this before the convention, and in proposing the suggestion of measures to the

Government, by which we can get rid of this terrible curse which is tearing down our race.

I feel, gentlemen, considerable diffidence in addressing so many intelligent and distinguished men of the profession, but I desire to say that during my administration of affairs in that department, official surveillance of prostitutes worked wonders. This was accomplished by first selecting two or three bad women, and from the information gained from them others were arrested; and from the information gained from the latter still further arrests were made, so that 1300 were brought up for examination, only two of them saying that they were kept women. The army at that time had 2000 cases of venereal diseases, and in four months it was reduced to thirty-six cases in the army of the Cumberland. I am satisfied, in my own mind, that if prostitution exists in a city, that disease can be, at least in a very great measure, stamped out by the police using the plan that was adopted in the army of the Cumberland. There were such beneficial results obtained at that time, that I have been convinced for years, that the only plan for us to pursue is to devise in some way a method by which these bad women can be examined. It occurs to me that men who frequent these places should be examined as well as women.

Dr. KENNARD, of Missouri. I feel great delicacy in saying anything upon this subject; in fact, the committee, as well as the gentlemen who have entered into this discussion, seem to have forgotten that we have a little town west of the Mississippi, of 500,000 inhabitants, where a law of this kind has been in existence. I do not propose to discuss this matter, but merely to mention a few points.

I have heard all that Dr. Andrews has said upon this subject, and have gone over this whole matter in discussions with the clergy, old women, and others. I wish to say that the law was a very excellent one; we were about to stamp out syphilis; we had about stamped out prostitution, and we had a quiet city. I have examined about 11,000 women, and ought to know something about the subject, and to have some data on which to base my opinions, and I repeat that we can stamp out syphilis, that we did stamp it out. The women supported the work themselves by weekly contributions, but through the fanaticism of old women, preachers, and I am sorry to say, a few doctors of Cincinnati, Chicago, and other moral cities, they succeeded finally in inducing

our legislature to abolish this law. And what has been the consequence? At this time in St. Louis you cannot walk half a dozen blocks without being asked to come in. This invitation was extended to me eight times one evening, while walking three blocks.

Such scenes as occur to-day in St. Louis would not have been tolerated during the existence of this law. Another thing, the women themselves did not oppose it. They are, or were, healthy. They saved more of their earnings than previously, although the tax upon them was in some instances oppressive. We kept respectable (?) women from houses of prostitution, and in our little village we were enabled to stop clandestine prostitution as well as that form which openly disgraces the streets of St. Louis to-day.

It is my understanding that the object of this report is to devise some means for the suppression of syphilis, and it favors legislation to attain this result; and to prove that legislation can in a very great measure crush syphilis out, I would call your attention to my own practice among this class of patients which, previous to the enactment of the law mentioned, was very extensive, but which during its enforcement almost destroyed my syphilitic practice in St. Louis.

One of the gentlemen suggested that men should be examined as well. When men set themselves up as a plantation bull or country stallion, it will do; men do not earn a living by prostitution.

Again, more women married during the existence of this law than for the same period since its abolition, and many of them to respectable men, so called. We then had a quiet, comparatively virtuous and good city, but now, through the fanaticism and efforts of preachers, old women, and my friend here, we are going to the devil as fast as possible.

Dr. ANDREWS. There are some interesting facts in St. Louis, which, if they were better known and fully vouched for, it would be well. My friend well knows, that when we favor one side of a question, inaccuracies are liable to slip in a report, especially a hospital report, not intentionally, of course, but through the weakness of poor human nature, making a record appear a little different from what it really is. Whether there is any such thing in St. Louis, I do not know; but I do know that these reports were contrary to European experience. Of one thing, however, I am certain, and that is that the St. Louis Marine Hospital shows less syphilis than before.

Dr. GROSS, of Pennsylvania. Gentlemen, I have little or nothing to add to this already extended discussion. The remarks made have been instructive and to the point. It is not the object of the Committee to force this matter before the Association, but take the initiative, and see what can be obtained by discussion and exchange of views.

I should like to ask my friend, Dr. Andrews, whether a part of a loaf of bread is not better than no bread at all? I want to know if he can save one person out of seven, or eighteen, or twenty, would he not be doing that person a great deal of good?

I suggested in the address presented last year that men be inspected as well as women; not respectable men, but sailors, and soldiers, etc. If we can have control over these men and prevent them if diseased from having connection with the women of the town, we can thereby save the women of the town and prevent the disease from extending. As respects the inspection of prostitutes, the experience of Europe and St. Louis shows that this is possible, and that the women themselves favor it, as they are healthier and can save more. What is wanted, Mr. Chairman, is simply to keep the subject before the profession and the people. There is a great deal in what the gentleman from St. Louis says, in regard to the fanatical opposition of the women and the clergy who know nothing of the terrible ravages of syphilis, and it is such people, who are ignorant of what they do, that throw obstacles in our way. The clergy, I know, are obliged, in a measure, to oppose this from the nature of their calling. We want something which will regulate this evil, to prevent the human race from being destroyed. Mr. Chairman, you know as well as I how this disease is progressing; how it leaves its slimy trail over many unsuspecting thresholds; how it cuts down the innocent babe, the fair young girl, and the stalwart man with an affection of the most horrible and disgusting character. It seems to me that we should do everything in our power to stay the ravages of such a disease. When the cattle plague threatens, do we not employ restrictive and preventive measures? Are we not more than cattle? Are we not human beings made in the image of our Creator? It seems to me very unwise to oppose this effort which is made for the welfare of the human family.

Dr. HODGEN, of Missouri. The plea that Dr. Gross has made is one that we cannot but feel. It is not only right, but it is our duty to protect the community from disease. But *do* we protect

our people from syphilis by means of legislation? Dr. Kennard says we do, and gives statements to prove that benefit was derived from legislation in St. Louis. But is there not another side? I don't deny that Dr. Kennard believes what he says is true in regard to the state of affairs in St. Louis; I *know* he thinks it is true, but I wish to ask Dr. Kennard a few questions. Will the doctor tell me whether there were more prostitutes registered the first or the last year?

Dr. KENNARD. I am not prepared to state. I think more during the first year. But one great reason for this was the many obstacles thrown in our way to prevent the execution of the law during the last year. The prostitutes were not diligently searched after. The opponents of the law even held a meeting denouncing all engaged in supporting the law, and I think Dr. Hodgen was present and addressed the assembly. Another reason was that a great many were caught the first year who supposed they ought not to be considered prostitutes, but who, upon finding they were obliged to register, abandoned the calling. Another and a very great reason why it was diminished was that the lower classes of the prostitutes were taxed too much. The lower orders of these bad women would go out to service because by prostitution they could not save anything, and by going out to service they were reformed.

[The two or three succeeding questions of Dr. Hodgen were not audible to the reporter.]

Dr. HODGEN. Will the doctor tell me if he can discriminate between gonorrhœa and vaginal discharges?

Dr. KENNARD. Ninety-nine times out of a hundred.

Dr. HODGEN. Will the doctor tell me how long after inoculation by syphilitic virus the disease is manifested?

Dr. KENNARD. Any one ought to know that.

Dr. HODGEN. I want to show to this Association in the first place the very great improbability of preventing syphilis merely by inspection of women; that venereal diseases are much more frequent than is generally supposed; that women in the second stage of syphilis are capable of transmitting the disease; that the "madame" having charge of houses of prostitution had her women inspected previous to the enactment of this law without any apparent result. It is true, also, that the number of people treated in the St. Louis hospitals, leaving out the Marine Hospital, was one less the last year than the first. If any means can be offered which will satisfy

me that this disease can be diminished I will be surprised, and if there be any means by which this disease can be diminished by any form of inspection I am uninformed of it. If it be possible to contrive a law which will save one out of ten or one out of ten thousand I will vote for it, but I doubt the possibility of this. On the contrary, many young men, through the encouragement afforded them by these laws, have subjected themselves to the acquisition of syphilis, when otherwise the terror of contracting the disease would have dissuaded them from the risk of exposure. I am opposed to empowering a committee to get up a law which is not to be referred back to this Association.

Dr. KENNARD. There is no man in the United States whom I respect more than Dr. Hodgen, but I would like him to explain to me how a man can obtain syphilis in the second stage. He further says that most cases of syphilis are contracted from clandestine prostitutes—that clandestine prostitution spreads the disease, and then refers to the treatment of syphilis in hospitals. Now, clandestine prostitutes do not have connection with that class of men likely to become hospital patients. That fact alone shows that his remarks have no bearing whatever on registration. I have no doubt that not one man here can bring himself to believe that the inspection of eight, ten, or twelve thousand women is not productive of some good. This examination of prostitutes does not increase the vice among men. Men *will* seek women whether they be inspected or not; it depends entirely upon whether they have money or not.

Dr. GARCELON, of Maine. In the opinion of those gentlemen who framed the report, does it not carry with it the idea of the license system?

Dr. MORRIS. There is not a word said about licensing.

Dr. GARCELON. Does it not involve that idea?

Dr. MORRIS. No.

Dr. GARCELON. I cannot see how any law can be framed which will be of any use unless this idea goes with it.

Dr. BRONSON. Every community has the right to close houses of ill-fame. The police in Boston have been extraordinarily vigilant in this respect; both sexes have been subject to the penalties of the law. Now, if this proposition does not——

Dr. MORRIS. Mr. Chairman and gentlemen, I am certain that the discussion has not been confined to the suggestions in the report. Certain things are recommended, by doing which we hope

to obtain only a slice of bread—not the whole loaf. The loaf will come in God's good time. We only suggest partial legislation, the regulation of persons in the military service, seamen, etc. This is all we aim at at first; in the end we do not know how far it will extend. We only ask that the Association endorse the sentiments of this Committee. We want you to say "Something must be done." If necessary, bring the action of the Committee back to the Association, and do not trust to the Committee alone.

Dr. GARCELON. Are the efforts of the Committee to be confined to the language of the report? if so, there are very few women under the control of the State government; and if we control them only, what will become of the great mass of prostitutes? I have no fear of licensing houses of ill-fame, and am very glad to hear the opinions of the gentleman from Missouri in this matter; I only ask, What are we to gain if we accomplish what the Committee desires?

There is another thing. If we go to our legislatures with a bill which the report would recommend, they will ask us "What do you wish?" We answer, "to license houses of prostitution," and I know such an answer will raise a howl of indignation, which, if it does not deter the profession from further efforts, will at least put them on their mettle. There is a feeling in the community that this, of all evils, should not be licensed.

There is still another difficulty which I should anticipate in respect to this matter; it has been suggested by the remarks of Prof. Andrews, and it is that the very men who would like to manage this thing are the biggest traitors. They encourage the passage of the law to make money of it, and the police I fear take measures to prevent the operation of the law.

Dr. WHITEHEAD, of Mississippi. We already have a law in every city in this country respecting concubines. It is a penal law, and I think it is a great shame to legislate so unjustly against these unfortunate creatures. I am in favor of putting every house under the license law. License them and charge nothing for it, so that this objection will not obtain hereafter. The idea of permitting the police of a city to blackmail these unfortunates, I think reflects upon our law-makers, and it should be changed.

A MEMBER. What is the motion before the house?

The CHAIR. Shall the recommendations of the report be adopted?

Dr. BRONSON. I move that this report be recommitted to the Committee, with instructions to frame a specific law, and report that law at the next annual meeting of this Association. Seconded.

[The above was the real motion, which was made, seconded, and finally carried, but at the close of the debate, and after the passage of the motion, Dr. Bronson handed the reporter a slip which read as follows, and which he desired should be substituted for the motion just passed, saying that it had received the consent of the Committee and of Dr. Andrews. "Voted that the Report of the Committee on Syphilis be recommitted to the Committee, with instructions to report a law applicable to the subject within national jurisdiction, and, also, recommendations concerning laws applicable to State legislation, with instructions to report to this Association at its next annual meeting."—*Reporter.*]

Dr. KENNARD. I doubt if anything can be done by drawing a law. I think a more elaborate report can be made by the Committee, and I would suggest this as an amendment.

Dr. BRONSON. Let them draw a law and give a more elaborate report also.

A MEMBER from Ohio. We do not—at least should not—act the part of law-makers, but indicate to law-makers what should be done.

Dr. MORRIS. I would state that in Great Britain all these measures were devised and carried through by medical men. It is eminently proper that we prepare a law for the national government. Let us show our own people that we appreciate this evil, and will do our utmost to remedy it, and, if we believe that the destruction of the whole race is imminent, let us not stop or postpone action.

Calls of question, and the original motion was carried.

Moved and seconded, that Drs. Kennard and Andrews be added to the Committee. The motion was carried, the Chair throwing the casting vote.

Dr. LINK, of Indiana, read a portion of a paper entitled, *A New Method of Amputation*, which elicited a great deal of interest from the Section, but as the paper appeared incomplete (having been written hastily), and the hour late, it was, with the consent of Dr. Link, referred back to him for further investigation and a more complete report. Dr. Link, in giving his consent to this disposition of his paper, said: My object, gentlemen, in presenting this paper now, in its somewhat unfinished state, is for the purpose of

establishing precedence, which has in some quarters been denied me. What I claim, as original, is the healing of the stump as an open wound, and, as the result of my means for attaining this object, comparative freedom from suppuration and rapidity of the healing process.

On motion the Section adjourned.

SOME RESULTS OF OPERATIVE SURGERY IN THE LAKE STATES, DIFFERING FROM THE STATISTICS FROM OTHER REGIONS.

By E. ANDREWS, A.M., M.D.,
PROFESSOR OF PRINCIPLES AND PRACTICE OF SURGERY IN CHICAGO MEDICAL COLLEGE.

The results of surgical operations are not alike in all places. Climate, and the habits of the population, as well as other local influences, powerfully affect the mortality of operations, and to a corresponding degree modify the rules by which their safety is determined.

This important truth has received very little attention hitherto, and it is with the hope of placing it in a clearer light that the accompanying facts are presented.

The following statistics of the surgery of the Lake States are not copious, but they have been collected with great care, and with special attention to the securing of honest and impartial reports. They are derived—

1st. From the records of Mercy Hospital in Chicago.

2d. From such imperfect records of other hospitals as were obtainable after the great fire.

3d. From private practice of various surgeons scattered through the Lake States, known to me personally as men of truth and honor.

4th. From records of my private practice.

5th. The statements respecting other regions are taken from the various hospital records already before the profession.

6th. I have rejected entirely all that class of scattered cases to be found by looking over the medical journals, because such records always contain too great a predominance of successful instances, and too few of the fatal ones, to give anything but a flattering and delusive sum total.

The numbers presented therefore are moderate, but they represent practice as it actually occurs.

Herniotomy.

There is no reason to suppose that this operation is performed with any more mechanical skill in the Lake States than elsewhere, yet it is subjected to influences, presently to be discussed, in consequence of which, it is more successful than in most of the localities whence our published statistics are derived.

Table I.—*Showing the Mortality of Herniotomy in the Lake States compared with the same operation elsewhere.*

	Total cases.	Died.	Per cent. mortality.
Lake States (mostly from private practice) . .	31	8	26
Dr. Cheever's private practice in Boston[1] . . .	17	07	41
Boston City Hospital[2].	10	7	70
London Hospital[3]	326	136	41
Larger English Provincial Hospitals[4]	177	72	41
Smaller English Provincial Hospitals[5]	118	53	45
Imperial General Hospital, Vienna[6]	259	114	44
Paris Hospitals[7]	172	136	79
	1110	533	48

From this table it appears that while surgeons in other parts of the world report after this operation a mortality of from 41 to 79 per cent., it is only 26 per cent. in the Lake States.

This curious difference is partly due to the fact that nearly all the cases are from private practice, because from the habits of our people, these patients are almost all promptly operated on at their houses, and rarely make their appearance in hospital at all; yet this cannot be the whole explanation, for by Dr. Cheever's figures, private practice in Boston gives for the same operation a mortality of 41 per cent. The other influences are probably as follows:—

1st. The population of the Lake States contains a large percentage of emigrants, who are not only in the prime of their age, but, like emigrants everywhere, consist of the more vigorous individuals of the population from which they came, and are therefore better able to bear the operation successfully.

2d. A still more important fact is that emigrants everywhere are intellectually the more alert and quick-witted part of the

[1] See Report of Boston City Hospital. [2] Ibid.
[3] Archiv Klin. Chirurg., III. Band, 30 Seite. [4] Ibid. [5] Ibid.
[6] Bericht k. k. allgemeinen krankenhauses. Wien, 1861 to 1871.
[7] Statist. des Hôpitaux de Paris, 1861 to 1863.

people. In cases of strangulated hernia, among us they rarely neglect themselves, but send at once for surgical help, so that probably they come into the hands of the operator earlier than in European countries, and consequently at a more favorable period for success.

3d. Owing to the dryness of the western climate, and the habits generated by frontier life, the people of the Lake States live more in the open air, and in houses less close than at the east, so that septic complications occur much less frequently than in regions where different habits prevail.

Similar results are obtained by studying the record of major amputations presented in the following table.

TABLE II.—*Showing the Mortality of the four Major Amputations in the Lake States compared with the same operations elsewhere (operations through the joints excluded).*

	Arm.			Forearm.			Thigh.			Leg.			All combin'd.		
	Cases.	Died.	Per cent. mortality.	Cases.	Died.	Per cent. mortality.	Cases.	Died.	Per cent. mortality.	Cases.	Died.	Per cent. mortality.	Cases.	Died.	Per cent. mortality.
Lake States— Hospital and private practice combined.	24	2	8	18	1	6	52	15	29	54	14	26	148	32	22—
Hosp. practice alone.	9	1	11	8	1	12½	14	5	36	19	4	21	50	11	22
Private practice alone	15	1	7	19	0	0	36	9	25	33	10	30	94	20	21+
Pennsylvania Hospital	71	9	13	100	9	9	76	25	33	138	54	38	385	97	25
New York Hospital....	21	1	6	20	5	25	51	24	47	44	13	30	136	43	32—
Boston City Hospital[1]..	27	10	37	17	2	12	41	22	54	34	11	32	119	45	38—
Mass. General Hospital[2]	76	14	18	68	13	19	236	68	29	267	66	25	647	161	25—
British Hospitals[3].....	297	110	37	244	40	16	935	435	46	613	270	44	2089	855	41—
British private practice[4]	433	19	4	378	2	0½	669	123	11	618	82	13	2098	226	10—
Paris Hospitals[5].....	35	19	54	33	11	33	119	80	67	113	71	63	300	181	60
K. k. allg. Krankenhaus., Vienna[6]	72	23	32	73	21	29	157	81	51	241	71	29	543	196	36—

In this table a result is reached similar to that in Table I., viz., that the mortality in the Lake States is much less than that given in statistics gathered elsewhere, with the exception of Sir J. Y. Simpson's astonishing statistics of British private practice, which latter figures we will presently examine. Laying them aside for the present, we find that the Pennsylvania Hospital reports the mortality of the four major amputations as 25 per cent., the New York Hospital as 32 per cent., Boston City Hospital 38 per cent.,

[1] Report of Boston City Hospital.

[2] Boston Med. and Surgical Journal, May 1, 1872.

[3] Works of Sir J. Y. Simpson, p. 338.

[4] Ibid., p. 304.

[5] Statist. des Hôpitaux de Paris, 1861 to 1863.

[6] Aertlichen Bericht k. k. allgemeinen Krankenhauses. Wein, 1861 to 1871.

British Hospitals 41 per cent., the Imperial General Hospital of Vienna 36 per cent., and the hospitals of Paris the enormous death-rate of 60 per cent.

To a certain extent, the reasons of this difference are the same as in the operation of herniotomy, but there is this distinction between them. Patients suffering amputation are much longer in hospital upon the average than herniotomy cases, and if there is the least prevalence of those septic influences grouped under the name of "Hospitalism," they are apt to succumb to erysipelas or pyæmia. Now the people of the west, living in a dry climate, and permeated with frontier ideas, are accustomed to expose themselves freely by night or day to fresh air, sleeping with the windows and often the doors open. In such a population, the surgeon has little difficulty in enforcing thorough and constant ventilation, because all the patients, nurses, and interns habitually co-operate with him; hence septic complications are comparatively rare; but as we go east, the air is more moist, and the whole community, medical men, and all, are imbued with the constant dread of taking cold, and the further east we go, the more this fear seems to prevail. In a community possessed with this dread, the surgeon will be a remarkable man if he is not himself influenced by it to lower somewhat his demands for fresh air, and his attendants, brought up with the idea that the chief danger of the wounded man is "taking cold," will, in spite of all orders, keep the doors and windows too much closed. The result, by a uniform law of nature, is a great increase of mortality. From these considerations, we see why there is but little difference between the results of hospital and of private practice at the west.

The terrible mortality of 60 per cent. after the major amputations of Parisian hospitals is largely explainable on the same principles. The ventilation is fearfully neglected there. Those who ever followed the old veteran Velpeau in his wards will remember the foul smell that pervaded them, yet this surgical hero, with a gravity and innocence that showed that he had no idea of his own responsibility in the matter, announced as a curious scientific fact, that every winter (when the windows are closed) there was an epidemic of erysipelas in his wards, and that the cases originating in his hospital were much more malignant than those entering from without.

Other Parisian surgeons have been seen to go their rounds, examining and probing wounds and ulcers, simply wiping their

hands and instruments on an apron, as they passed from bed to bed, and taking no precaution against carrying septic contagion. When such things are seen among the head surgeons, it is easy to conceive what will be done by nurses and dressers.

In combating against hospital infection, the surgeons of the Lake States have had the advantage of smaller hospitals than those of the east, few of them ever having had over three hundred patients at the utmost, and most of the time much smaller numbers.

The opinion advanced by some surgeons, that a large hospital, after a moderate period of occupancy, becomes so contaminated that all its stones and mortar are full of fomites, and cannot be purified except by destruction, is not sustained by facts. St. Bartholomew's Hospital of London is a large one, and has been a long time in existence, and formerly suffered its full share of septic influences. Sir James Paget, however, very early began a reform, and since then Mr. Callender has so revolutionized every branch of the surgical administration, that septic influences are banished, and the results of amputations are made superior even to the best of private practice. In the *St. Bartholomew's Hospital Reports*, vol. x., p. 133, he gives the following table as the result of the improved management:—

	Total cases.	Died.
Amputations of the thigh	20	1
" " leg	16	0
" " arm	2	0
" " forearm	6	0
Totals	44	1

This is a mortality of only about two per cent. Mr. Callender's attention is not confined to rectifying the ventilation. Sponges are banished; every patient has his own dressing brush, kept in his own glass of carbolated water; every bed of an operative patient is baked in an oven, before he is placed on it, and the most minute care is exercised to put the patient in good condition and to operate on him at a favorable stage.

The profession in London endorse Mr. Callender as a man whose truth and honor are above suspicion, and if this is so, it is safe to say that his experiment in St. Bartholomew's will revolutionize the hospitals of the world.

Sir J. Y. Simpson made an effort to ascertain the mortality of the four major amputations in private country practice in Great Britain. To this end he distributed to the profession of the

kingdom an immense number of circulars, asking reports of cases. The responses gave him a collection of over 2000 major amputations in country private practice, with a mortality of only 10 per cent. This would be a valuable result as showing the superiority of private treatment over that in hospitals, and instructive to us as showing that British private practice is twice as successful as that of our Lake States, had the statistics been rightly collected; but unfortunately, Sir James' method of gathering the figures had a fault which deprives them of almost all their value. As his erroneous plan is repeated every year by various committees of medical societies, a word or two in exposure of its fallacy may be useful. His plan was simply to prepare a printed blank for reporting the cases, and asking a response. This was mailed in great numbers to all parts of the kingdom; often to persons with whom Sir James was wholly unacquainted, and of whose truth and honor he had no proof. The result of such promiscuous circulars is always something like this—

1st. Those surgeons who have happened to have a "a run of bad luck," that is, an accidental succession of fatal cases, feel chagrined at their ill success, and are by no means disposed to blazon it abroad. Generally they will not answer the circular.

2d. Those who, from skill or accident, have had a series of successful cases, are naturally elated, and will respond with alacrity. Hence, the fatal cases are suppressed and the successful ones reported.

3d. Dishonest surgeons (and there are some such in Great Britain as well as elsewhere) will falsify their reports, omitting fatal cases, and stuffing the blanks with fictitious successful ones.

For these reasons the plan of Sir J. Y. Simpson, and of so many surgical committees, of mailing blank reports to a great number of unknown practitioners, must bring in statistics which are utterly delusive, and whose falsification is always on the side of success.

To avoid this error, I collected the above statistics by applying only to surgeons whose integrity and truthfulness were personally known to me, and made the applications in such a way as to obtain a full report in nearly every case. Almost the only persons applied to, from whom I obtain no reports, were certain surgeons in Chicago, whose memoranda were all burned in the great fire, and whose cases were too numerous to be correctly recalled by memory. By this method, I reached fewer persons than Sir J. Y. Simpson, and obtained fewer cases, but the reports which I did secure are

reliable, and represent the true results of surgery in the Lake States. The persons reporting are all educated men, and fully equal in point of skill to the average of those who would receive such a circular as that of Simpson. I think, therefore, that Sir James deceived himself by his method of procedure, and had he secured reports representing the exact truth, the mortality of country practice would have appeared there, as it does here, to be about twenty-one instead of ten per cent., for the average of the four major amputations.

SPINAL ANÆMIA WITH PARTIAL PARALYSIS AND WANT OF CO-ORDINATION, FROM IRRITATION OF THE GENITAL ORGANS.

By LEWIS A. SAYRE, M.D.,
OF NEW YORK.

In 1870 I presented to the American Medical Association a short paper upon *Partial Paralysis from Reflex Irritation, caused by Congenital Phimosis and Adherent Prepuce,* illustrated by several cases, and published in their *Transactions* of that year.

This paper produced a marked effect upon the professional mind, as I received letters from all parts of our own country, as well as from some of the most distinguished surgeons of Europe, thanking me for the explanation given and confirming the views expressed, by the narration of cases which had come under their own personal observation, but which, until this explanation had been offered, they had not thoroughly comprehended.

Dr. Atlee, of Lancaster, Pennsylvania, wrote me that on reading the paper it brought to his mind a case at some distance from his residence which he had seen several months previous without fully understanding it; but that the explanation made it so clear to him that he at once visited the family, explained it to the parents, and performed the operation, which was followed by the perfect recovery of the use of the child's limbs.

The following letter from Dr. Pitcher explains the same idea:—

"Detroit, Dec. 3, 1870.

"Lewis A. Sayre, M.D.

"*My Dear Sir:* I have read with pleasure your pamphlet on the subject of *Partial Paralysis from Reflex Irritation* which you were kind enough to send me. It enables me to study a case sent to me from the interior of this State some time since from a new standpoint. Others I am sure will thank you for the use of this key to unlock some of the obscurities we meet with.

"With respectful consideration, I am

"Yours, etc.,

Z. PITCHER."

Many similar letters were received from different sections of the country, and some of them describing cases of hernia, and others prolapsus of the rectum dependent upon the same cause, and which had been relieved by the operation.[1]

The same ideas suggested by me at the time, also occurred to Mr. Barwell of London, who, in his *Lectures on Infantile Paralysis*, gave a very vivid description of the peculiar form of paralysis dependent upon irritation, caused by adherent prepuce, and stated that the fact had never before been observed; but upon reviewing a copy of the *Transactions* containing the article, he wrote me a beautiful letter, acknowledging my priority of observation and description, but fully confirming the views expressed, and stating that he had seen a number of cases which he had traced distinctly to this cause, and which recovered by proper treatment.

So many cases of a similar nature have come under my observation since that time, some of them being aggravated by other and more serious nervous complications, that it has seemed to me proper to bring the subject before the profession more fully, as I am well satisfied that there are many grave affections of the nervous system attributable to this cause that have not, as yet, even been suspected. Some of these cases have been in children of the opposite sex, and I have, therefore, headed my paper "Irritation of the Genital Organs," as each sex seems liable to the same exciting cause.

I have no theory of explanation that is perfectly satisfactory even to my own mind, and for that reason I have brought the matter before the Society for a more elaborate discussion, and to see if we cannot obtain a true explanation. It has seemed to me in many cases that an anæmic condition of the spinal cord is in some way connected with the disease, as some of the patients lose entire muscular power, even the power of speech, in the erect posture, and yet, lying upon their backs for some little time, and when the cord could be nourished with more blood, they could, in a measure, recover the power of speech and motion.

It may, however, be a hyperæmic condition of the cord, instead of

[1] Congenital Phimosis.—*Vide* Med. Times and Gazette, May 16, 1868. Clinical Lecture by Mr. Thomas Bryant on "Adherent and Elongated Prepuce; eight cases illustrating incontinence of urine, difficulty of micturition, pain, intermittent flow, prolapsus recti, hæmaturia and priapism dependent upon the condition of the prepuce."

anæmic, the paralysis being produced by over-pressure on the nerves from an engorged condition of the vessels.

As before remarked, I have no fixed theory upon the subject, and will, therefore, simply present the cases, accurately detailed, and let the Society make such explanations as they think proper.

CASE I.—In March last [1874] I received the following letter from a highly cultivated lady, the daughter of one of the most distinguished surgeons of our Southern States, and as it is such a graphic recital of her child's disease, I have obtained consent for its publication, and, therefore, offer such parts as seem apposite:—

"WASHINGTON, D. C., March 7, 1874.

"DR. SAYRE.

"*Dear Sir:* I have a child, now three years old, who has never walked; never reached out his hands to take hold of anything; he has never talked, and, I venture to add, has never used his eyes to look at any object; and yet there is no blindness, no paralysis, and the child is intelligent.

"He was born with a urinary trouble, and has suffered in those parts all his life—at times is a martyr.

"A physician here has traced a case on record where Dr. Marion Sims writes you a letter to visit a little fellow whose legs were crooked, and perform some operation for paralysis. In that case you describe my baby's symptoms exactly. You questioned the nurse, and the result was not an operation for paralysis, but circumcision.

"All the physicians of the Union, excepting yourself and some others of New York, have seen the child. He is so strong, so beautiful, so full of life, I cannot give him over to such infirmity.

"I am the daughter of a physician of celebrity in L———, and, although he is no longer living, I feel that I have a claim upon the profession for my son's peculiar infirmity. . . . . .

MRS. W. B. E."

As it was impossible for me to leave for Washington (as was requested) at that time, I was compelled to postpone my visit until after the lecture season was over, and some professional engagements would allow me the opportunity. During the delay I received numerous communications, the last one of which is here presented.

"WASHINGTON CITY, Sunday, March 29, 1874.

"*Dear Doctor:* The period of your delay from our little one has now expired, and we are watching the trains with beating hearts, hoping every day to see you.

"We feel assured that you will deliver our little darling from his sad thraldom, and we beg that you will no longer delay your coming, and you will have the blessings of a mother who has passed three years in anxious vigils and tears.

MRS. W. B. E."

That evening I left for Washington, and fortunately I found in the same train my friend Dr. Keyes, of this city, who was going to the same place. We arrived in Washington about seven in the morning, and on our way to the Arlington stopped at the hotel of the lady. I requested Dr. Keyes to see the case with me, as it was possible I might require his services during the day. The child was brought into the room presenting almost the exact appearance seen in photograph of page 266, which being almost impossible to describe, I refer to the picture.

The following is the history as taken at the time:—

Wm. R. E., aged three years four months. Born in New Orleans of healthy parents on 10th November, 1870. Was perfectly natural at birth, and sight was good. For some days passed no urine. Was subject to severe fits of crying which were thought to be due to colic, and for which various remedies were used, until, accidentally, the mother discovered great erection of the penis. Applied hot fomentations over the parts with immediate relief, since which time the mother has always resorted to the same means with equally good effect. Has frequently through the day what the mother terms "spasms of ecstasy" in which he laughs immoderately, and his eyes are bright and glistening, but yet he apparently sees no object, and the penis is in a state of extreme erection. Dr. Levis, of Philadelphia, examined his eyes in 1871, and stated that there was no amaurosis or blindness of any kind, that everything belonging to the structure was normal, and yet he could not see, and he could not explain the case.

Present condition, April 1, 1874. Very large and well developed child; rather white. Unable to stand; incapable of voluntarily contracting any of his muscles when standing, or rather, when being held in the upright posture, as it was impossible for him to stand, but when lying on his back for some time can move

his hands and can turn over; but when held upright his legs always spasmodically cross each other, hands close, wrists flex, elbows the same; in fact, all the adductor and flexor muscles act, and produce a strange distortion: the mouth opens, and there is a vacant stare of idiocy with a curious laugh of half intelligence.

The penis is in a state of almost constant erection, and greatly excited at the least irritation. The orifice is red and tender.

Teeth nearly all destroyed by medicine, and is now nourished on a bottle.

Assisted by Dr. Keyes, of New York, I examined him carefully and found the prepuce firmly adherent to the glans and very much constricted at the orifice. A probe passed into the bladder found all natural.

I immediately nicked the prepuce and tore it off from the glans; tore the frænum and completely uncovered the organ. Nearly a complete circle of hardened smegma was behind the corona. Considerable hemorrhage following, rags dipped in persulph. ferri were wrapped around the penis, and in less than an hour the child had fallen asleep without any opiate or narcotic of any kind, a thing the mother states had never occurred before.

She says that in his states of "ecstasy" nothing will quiet him, although he has frequently taken doses sufficient for an adult, of chloroform, paregoric, bromide of ammonia, hot toddies, all without effect, his frenzy of laughing and curious actions continuing until she applied very hot water to the privates and opened the window and let the air blow upon his face.

At 5 P. M. called to see the child, and was amazed to see him put out his hand to shake hands with me the very moment he heard my voice. He could not speak, and I am not certain that he saw me, but he gave the most marked evidence of delight at my presence, although I had hurt him so badly only a few hours previous. His mother almost swooned with delight, and said it was the first time he had ever put out his hand to take hold of anything in his life. He seemed to comprehend what she said, and expressed in his queer way great satisfaction. The mother stated that formerly whenever she went to Dr. Pancoast's office he would always cry the moment she opened the door, and the same thing occurred with all the different physicians who had seen him more than once or twice.

At 8 P. M. called with Dr. Busey, and found the child sleeping perfectly natural, with his mouth closed, lying on his side, and

knees bent up, but legs *not* crossed; his hands *open*, wrists extended, in fact, as perfectly natural as any child, and which the mother states is the *first* time this has ever occurred in his life.

April the 9th, 1874, I received a letter of the warmest thanks and congratulations, and among other things containing "To you the great satisfaction of relieving the poor little fellow of excruciating pain almost every hour of his life. His wound is healing fast, and, strange to say, the little parts seem to have grown. . . . It would do your very heart good to hear his roar of laughter as he sits frolicking in his father's arms. . . . .

"Most gratefully,

MRS. W. B. E."

This child was directed to have a mechanical support to its head and trunk, and limbs to be kept in a proper position, and to be put upon a more nourishing diet.

A few days afterwards I received the following letter:—

"His body has assumed natural, flexible positions; his little hands, which have always been tightly clenched, are open and natural; he looks more and more natural every hour; his bowels act naturally, not having to resort once to his daily remedy—the enema—since your operation upon him. It is just one week since the operation. The little fellow does not wake until between six and seven in the morning, ate a whole spring-chicken of respectable size for his dinner yesterday and two snipe and a slice of buttered toast and a whiskey toddy for his dinner to-day. He holds a chicken bone in his hand now, and when it is guided to his mouth he bites it in an ecstasy of delight. His little parts seem to have grown considerably, notwithstanding the soreness of the wound."

I saw this child again on January 7, 1875, and found it immensely improved, although the treatment had not been efficiently carried out, no support having been given to the head. It could not hold its head up with the strength of the normal child, although it could sit down and get up and stand balancing itself without assistance; could speak several words and had acquired the power of eating—could chew its meat without difficulty.

Of course, this case requires long-continued careful treatment by manipulation, friction, and such constitutional remedies as are indicated to restore nervous vitality. In a letter from the mother dated Washington, March 20th, 1875, she says, "Baby begins to

talk, understands accurately, and is growing fat—eats half a pound of mutton at a meal, *provided it is Southdown.*"

CASE II.—F. A. A., sent to me for treatment by Dr. Paul F. Eve, of Nashville, æt. 2 years, came to my office May 15, 1874. He was a well-developed child and quite intelligent. Father died of heart disease; mother in fair health. This is the third child; two children were lost in infancy. Has been reared by the bottle, all meats strictly forbidden to be used; child quite eager for meat, but is not allowed to have it. Said by some to have scrofula. Child walked well until last September, when he had slight fever for a few days resulting in a loss of power in the lower extremities, being more marked in the left leg.

Present condition. He has very little control of the left lower extremity, which can be drawn out about an inch longer than the right, due to the relaxed condition of all the muscles of the thigh and leg.

The right limb is very weak, but the muscles seem more firm, and have more power than the other.

Measurement shows half an inch atrophy of left leg.

Mother notices that the boy is very fretful, restless at night, peevish in the day, and that his penis is often excited. Muscles respond to electricity.

Diagnosis.—Congenital phimosis exists, and is, probably, the cause of the partial paralysis now existing in the lower extremities from reflex irritation.

May 16, 1874. I operated upon this case, assisted by Prof. W. H. Pancoast, of Philadelphia. Prepuce clipped off, mucous membrane torn off to the corona, dressed back with oiled rag.

23*d.* The child throws his left leg about readily and is daily gaining power in the entire extremity. Used electricity.

27*th.* Boy walks several steps alone. Electricity daily.

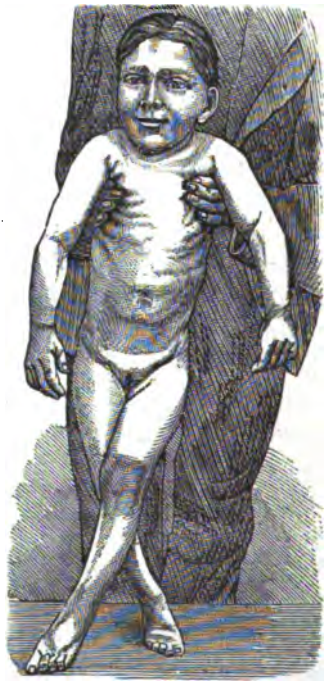
30*th.* Almost perfect control of left lower limb, only too much bending of the knee backwards. Muscles regaining power rapidly. Boy always on the go.

June 4. Brace to support the knee has been used several days. Boy uses both limbs readily. The penis is uncovered (with ease) daily. He returns home to-day. Walks anywhere about the house with *perfect* use of limbs. Was directed to use electricity for some time.

CASE III.—L. H. W. (female) æt. 3 years and 9 months; was delivered by forceps, first child. Mother's age, 36. Child was resuscitated after two minutes. The mother during pregnancy suffered from muscular rheumatism. Child's health has never been perfect since birth, has always suffered from the present trouble. When the child began to crawl she would lie on the floor, but unable to roll over. Then, when the age came for the child to sit up, she was unable to keep the body upright. She had power over all the joints (and they could all be placed in normal positions), excepting that there was want of power of keeping the trunk erect. Some kind of infantile paralysis was suspected, but not clearly made out. Treatment has been iron, tonics, phosphorus, cod-liver oil, and electricity applied to spine morning and evening, without any apparent improvement except what might fairly be attributed to time. The condition has been from the start what it is now. Lives on milk diet, meat, etc.

Present condition (as seen in Fig. 1).

Fig. 1.



When she is held up, as it is impossible for her to stand, adduction of both limbs, crossing similar to those of Mary B. (to be

hereafter described). The adductors are tense and the tendones Achillis also, although no spasm is excited by pressure, and the tension may be voluntary.

The clitoris is red, and when it is touched there is excited a spasm of the thighs. Child never *sat alone* or made any efforts to stand erect. Suggested to watch the child in order to ascertain if the trouble is dependent upon genital irritation, and decided, if this seems to be the probable cause, to relieve it by an operation.

28*th*. Child chloroformed by Dr. Yale, after which I made pressure on the clitoris, and a marked spasm of the entire body was produced as from the shock of a galvanic battery, although the child was perfectly anæsthetized at the time. Removed the clitoris; some bleeding vessels were cauterized with nitrate of silver; wire breeches used to confine the limbs, and ice bags applied to the wounded parts.

30*th*. The child sat alone to-day for a minute, the first time her mother ever saw her even *attempt* to sit erect.

31*st*. Divided the tendones Achillis and replaced the child in the wire cuirass.

June 20. Divided the adductors on either side near the symphysis pubis, and kept the legs abducted by applying two iron rods twelve and fourteen inches in length to the heels and soles of her shoes.

July 4. Girl moves her limbs readily and has more power over her body. Contraction at the knee daily lessening. Electricity to the spine has been employed the past two days.

10*th*. Wheel-crutch is used with good effect in exercising her limbs; when she left for her home.

CASE IV.—August 4, 1874, I was called in haste to the St. Nicholas Hotel to see a case of retention of urine, and found Mr. A., æt. 52; a strong man; never had his glans penis uncovered; prepuce redundant; frænum very much contracted, causing the urethra to be patulous and irritated. Lately has been suffering from paralysis of the bladder. Had not passed urine for forty-eight hours.

I drew off his urine, and the following day again passed the catheter; slit up the prepuce, which I found almost cartilaginous, and which did not bleed until half an inch had been divided; nicked and tore back the frænum and freely exposed the glans. No adhesions around the glans; slight bleeding, arrested by styptic cotton.

Reflex irritation from the end of the penis had caused spasm of the neck of the bladder, which was the original cause of the retention or loss of power in the bladder to force water.

6*th*. Passed his water voluntarily, and has continued to do so ever since.

CASE V.—Charles E., æt. 3½; was sent to me by Dr. Douglass, of Roundout, October 12, 1874, for some lameness of his right leg, "but for which it was impossible to discover any cause." He was well developed, but rather pale. The father states: "He is always very active but very clumsy, constantly tripping and tumbling down. I have noticed particularly," he says, "his tripping in going up the steps in the back yard, and once he fell, cutting his forehead, on which now there is quite a scar."

On stripping him, I could find the slightest difference in the nates, the right being a very little smaller than the left, but the ileo-femoral crease was the same as upon the opposite side.

When I laid him upon his back, the first thing that attracted my attention was his penis, which was rather large and in a state of extreme erection. The orifice of the urethra was very large, wide open, and exceedingly red. The prepuce was firmly adherent to the glans all around the orifice of the urethra, thus drawing it open when the organ was erected. The father states that his wife had *often* spoken to him about the "extraordinary size of the organ and its frequent stiffness." He is very restless in his sleep, constantly shifting and talking.

Very slight pain on complete abduction and eversion of the right thigh. Extension, adduction, and flexion perfect. No pain on concussion, and, consequently, there could be no disease of the hip-joint.

Diagnosis.—Partial paralysis from congenital phimosis, and the soreness of which he complains being due to the bruises from frequent falls. Recommended circumcision.

December 10, 1874.—I received a letter from his physician, Dr. Douglass, stating that he had circumcised the boy, assisted by Dr. George C. Smith, October 15, 1874, and that the child was now perfectly well.

CASE VI.—In December, 1873, I received a letter from Dr. Brigham, of California, asking my advice in regard to a case of acquired paralytic club-foot. From the description of the case given me in his letter I was led to suspect irritation of the nervous

system from phimosis, and wrote him to that effect, inclosing a pamphlet upon the subject.

I received the following letter from the doctor, dated San Francisco, February 27, 1874:—

* * * * * * * *

"As soon as possible I examined the child's penis, and found an elongated prepuce with adherence to the glans its whole circumference. I performed circumcision, and then, not being able to free the glans by the finger, I made a slight incision around the adherent part, and was then enabled to tear it down properly. Considerable glandular secretion was washed away.

"The improvement in the child's leg since the operation has been marked. It is no longer cold, but is of the same temperature as the other. No electricity or rubbing has been used since.

"The legs before the operation measured as follows, January 24:—

Ankle,	well	limb,	6	inches;	diseased	limb,	$5\frac{5}{8}$	inches.
Calf,	"	"	$8\frac{3}{16}$	"	"	"	$7\frac{7}{8}$	"
Knee,	"	"	$7\frac{3}{4}$	"	"	"	$7\frac{9}{16}$	"

"The operation was performed January 27, and, on the 28th of February, they measured as follows:—

Ankle,	well	limb,	6	inches;	diseased	limb,	$5\frac{3}{4}$;	gained	$\frac{3}{16}$.
Calf,	"	"	$8\frac{3}{16}$	"	"	"	$7\frac{1}{2}$;	"	$\frac{1}{16}$.
Knee,	"	"	$7\frac{3}{4}$	"	"	"	$7\frac{3}{4}$;	"	$\frac{3}{16}$.

"The change is considerable, the knees being now of the same size. The child walks better, and, I think, we have reason to expect an excellent result.

"Hoping to be able soon to report still more favorably of the child's progress, I remain,

CHARLES B. BRIGHAM, M.D."

CASE VII.—Sept. 20, 1873, the following case was sent to me for idiocy, and on account of her inability to stand. She was five years of age, and the annexed figure (Fig. 2) gives a tolerable idea of her appearance. In the picture she is held up by the operator, which prevents the deformity from showing as conspicuous as if she had attempted to bear her weight upon her feet. When she attempted to stand, the limbs crossed so far that the nates nearly touched the floor, and she looked idiotic; chin resting on the sternum, mouth open, saliva flowing out of it, eyes wandering, head and hands in constant movement, and expression of stupidity.

In horizontal posture, after a few moments, her entire countenance changed to that of intelligence. After a short time she began to talk, and talked sensibly. Put her in the erect posture

Fig. 2.

again, she soon assumed the same look of idiocy and lost the power of speech entirely; the limbs immediately became strongly adducted.

When I again laid her upon her back she improved in her intelligence, and her limbs could be easily abducted, and in this position she had the power of voluntary contraction of nearly all the muscles of her limbs. The clitoris was very red and much enlarged, the slightest friction upon it throwing her into a peculiar spasm.

I therefore diagnosticated the case as one of spastic contractions of certain muscles, and partial paralysis of others, from anemia of the spinal cord and arrest of development, probably from peripheral or genital irritation.

Treatment.—Secured her in the wire cuirass, as seen in Fig. 3. Clitoris clipped and cauterized, with ice applied. Child recom-

mended to be kept in horizontal posture, to be taken into the open air; nutritious diet, cod-liver oil, iron, and phosphorus.

Fig. 3.

Three months later I heard from her physician that she was immensely improved, and in June last was able to walk without assistance, and had acquired coördinating power.

CASE VIII.—C. H. W., aged three years. Double varo-equinus, congenital. Treatment, mechanical, was applied when child was four months old, and continued ever since. Has on now a pair of braces which the mother thinks have bent his legs; he was, therefore, sent to my clinic at Bellevue Hospital Medical College, in November, 1874, for the purpose of having tenotomy performed. At that time there was extreme varus of both feet with the usual callosities over the outer malleoli, from pressure against the iron bars which were used for straightening the feet. The feet were readily replaced in normal position by the hand, but immediately returned to their deformed posture when the support was removed, showing the deformity to be of paralytic origin.

The child was suffering from phimosis; the mother states the urine sometimes dribbling, sometimes being retained, and passed with great difficulty. Priapism, as she also says, had been frequent from birth, and the child sometimes complained of pain of the penis. I circumcised the child before the class, and applied no

treatment whatever to his distorted feet, in order to see what effect this nervous affection had had in producing the deformity. The mother returned at the end of two weeks, stating that the child had been perfectly quiet every night since the operation, sleeping without any disturbance, and passing his water without difficulty, which had never occurred before. He ate well, was very much improved in his general appearance, and could stand flat on his feet without any assistance. Upon stripping the child's feet the mother's statement was fully corroborated, as will be seen by the annexed figure (Fig. 4), which was taken immediately after by

Fig. 4.

Mr. Mason, photographer to Bellevue Hospital, just two weeks from the operation. As will be seen, the child stands perfectly flat upon the feet, with simple inversion of the great toe of the left foot, only two weeks having elapsed since the operation. The increased muscular power without the addition of any electricity has been almost marvellous, and now by the application of the galvanic current to the perineal muscles we have a prospect of the perfect recovery of the child without any further mechanical support.

Since the preparation of this paper, and, in fact, only this evening, I have been presented a paper upon the same subject by Dr. F. N. Otis, of this city, which was read before the Academy of Medicine, in February, 1874, but never published until this time, and, therefore, I was not familiar with its contents, which I exceedingly regret, as some of the facts contained in Dr. Otis's paper were so perfectly in accordance with my own observations that I would like to have made extracts from it.

This paper was prepared for the Society of Neurology and Electrology, and read at their meeting March 1, 1875, and the president, Dr. Meredith Clymer, considered it of so much importance that he directed it to be made the subject of special discussion at the meeting of March 15.

This discussion took place at the time appointed, and was participated in by many of the profession present; but the remarks of Dr. Otis, which were phonographically reported by Mr. George, were such a corroboration of my own observations, and so remarkably similar in the history of some of his cases and the results of treatment, that I have obtained from Dr. Otis the privilege of appending his remarks to my paper, as they show that the same facts have been noticed by different persons without the knowledge of each others' observations.

Discussion on a paper by Lewis A. Sayre, M.D., entitled "Reflex Paralysis and Want of Co-ordination, from Genital Irritation." Read before the Society of Neurology and Electrology, March 1, 1875.

Dr. OTIS. I am very happy, Mr. President and Gentlemen of this Society, to have the opportunity of confirming, through a somewhat extended acquaintance with similar reflex irritations, the facts which Dr. Sayre has delineated in his valuable paper. Dr. Sayre's observations seem to relate chiefly to the effects of preputial contractions and adhesions, and irritations of the clitoris; but, in my own experience, genito-urinary affections, giving rise to reflex phenomena, have not been restricted to the prepuce and clitoris, but have extended to the entire genito-urinary tract. In a paper which I read before the New York Academy of Medicine, in February, 1874, there is a *resumé* of nineteen cases of reflex

irritations, most of which were apparently due to urethral stricture. Several, however, exemplified in a marked degree the capacity of preputial inflammation and contraction to produce grave reflex disturbance in organs remote from the source of trouble.

Case 1.—The personal case related to me by Dr. Brown-Séquard was of a man, at first believed by him to be suffering from advanced cerebral softening, but which, almost accidentally, was found to be the subject of contraction of the preputial orifice, associated with a severe balanitis. This, relieved by circumcision, brought about a rapid and complete recovery from brain symptoms, differing in no appreciable way, from those arising through organic cerebral disease.

Case 2.—A child 8 months old came under my observation, some two years since, suffering from retention of urine. A contraction of the preputial orifice was present, that scarcely admitted the entrance of a fine silver probe. This I slit up freely, and went to my office for a small catheter, with which to relieve the retention. On my return (within an hour), I found that the little patient had, in the interval, urinated several times; completely emptying the bladder. I was informed that this child suffered from a partial *paraplegia*, immediately subsequent to the retention; from which, however, he recovered in a few weeks without medical care.

Case 3.—A badly nourished boy, 12 years of age, of scrofulous parents, had been under my care for several years, during most of which time he was under treatment for troubles supposed to be dependent upon a strumous diathesis. He took but little interest in the sports of childhood, and clung constantly to his mother. He was habitually dull, listless, careless, and irritable, and suffered from enfeebled digestion and frequent headaches. He was also troubled with enuresis; passing his water several times, unconsciously, during the night, and habitually wetting his clothes during the day. Finally, Dr. Fordyce Barker saw the lad with me in consultation, and after an exhaustive consideration of his case (in which the probability of a malarious element was suggested), a somewhat different course of treatment was decided on; the use of the ext. of belladonna (which in ¼ gr. doses had been found to control in great measure the enuresis) was continued. This course was pursued faithfully for several months but with no apparent benefit. One day the mother called with the boy to have the prescription for the belladonna renewed. I took this

opportunity to examine, for the first time, the condition of the genito-urinary apparatus; I found the penis of normal size, but with a very redundant prepuce, with contracted orifice. Explaining the possible dependence of the enuresis upon the abnormal condition of the prepuce, the parents readily consented to my proposal for circumcision of the child. This I did soon after. During the operation the prepuce was found firmly adherent to the glans, for nearly one-half its extent, and the meatus urinarius was contracted to No. 12 f. After completing the circumcision, I divided the contracted meatus to 22 f. (the apparent normal calibre of the urethra). This was done at about 4 P. M. On the following morning I called, and found that no urine had been passed since the operation, and the lad voided, with slight difficulty, a large quantity in my presence. On the following day, the father sent me word, that his son "seemed to be quite another boy;" that, whereas, before the operation he had an eye like a fish, it was now bright and clear, and that he was in an apparently cheerful and healthful mental condition. The improvement continued both mentally and physically. The enuresis was completely relieved for a little over a month, when it partially returned. Upon examination I found that the *orifice of the urethra* had recontracted to 16 f. I now divided it to 24 f., since which time (now over 4 months) he has had no recontraction and no return of his incontinence.

In a letter from Dr. C. H. Masten of Mobile, dated December 27, 1874, he writes:—

"Following, I furnish you the brief notes of a case, which I fancy will interest you, as it bears so directly on your 'Reflex' theory; a theory which I, for one, believe is ere long destined to become a fixed surgical truth.

"On the 29th of the last month (November) I was requested to see a little boy, the son of a gentleman of this city. The child was 18 months of age, very delicate, pale, fretful, no appetite, languid, complained whenever he passed his urine of pain; was wakeful at night, and in the nightly habit of urinating in the bed. When I was called to see him, from all the description given me by his father, I was led to believe he had stone. Upon examination, however, I found he had an elongated prepuce, and that the preputial orifice was *very small;* congenitally contracted; so small, indeed, that I found difficulty in passing into the opening, an ordi-

nary silver probe. I was satisfied that my diagnosis should be 'Reflex irritation,' produced by want of a full and free passage to the urine, through the preputial orifice, and so stated my opinion to the family physician, who had called me to the case; *he laughed,* at the diagnosis. I insisted that I was correct, and proposed to satisfy him, by the results of the simple operation of splitting up the prepuce, '*and nothing more.*' As there was a clear indication for opening the orifice, *before* anything else could be done; he consented; and I performed the little operation; the results show the correctness of *your* theory, and of my diagnosis established thereon. The very next day, my little patient was decidedly improved; he ate well, he slept quietly, and to-day, now one month since the operation, the child is *perfectly well,* and *in better health than ever before;* his father tells me he has gained at least 8 to 10 pounds in weight, and that he gives them no trouble, night or day. I saw the case only three times, and then only went to remove the little sutures which I used to unite the cut edges.

"I look upon this case as a most marked one, to substantiate your views; and send you the outlines of the same, thinking they will be interesting to you, as additional proof of the fact that reflex irritation of the genito-urinary system can, AND IS produced, by these slight contractions. Please excuse the haste with which this is written; when at leisure let me hear from you."

Dr. Francis H. Brown, in charge of the Child's Hospital, Boston, writes: "I have been waiting to see the results of treatment in a case in which I was led by your article on 'Reflex Irritations' to consider one of that character. A boy of 10 years came into the Hospital a few months since, suffering from paraplegia associated with urinary incontinence. The ordinary treatment was pursued for some time, but with little if any benefit. Finally, discovering a severe form of balanitis, with preputial contraction, I circumcised the boy. This resulted in prompt relief from the incontinence, and in a few weeks, he was dismissed from the hospital, *completely cured of his paraplegia.*"

I believe, Mr. President, that many nervous disturbances, which may be *unfelt* at their origin, and which manifest themselves in various, and often curious ways, are due to irritation of the character of those just described; and further, that they may have their point of irritation *in any part of the genito-urinary tract.* Let me cite an illustrative case.

Dr. Y., a physician (aged 62), from one of our Western States, came under my care a short time since, for treatment of urethral stricture. His normal urethral calibre was 36 f. Five distinct bands of stricture were found between the meatus and the bulbo-membranous junction, and were recognized with No. 19 f. bulbous sound. These were all divided at one operation, and 36 f. solid steel sound passed into the bladder. The subject of "Reflex Irritations" had not been discussed; the doctor was quite ignorant that any ever occurred, dependent upon stricture. A few days after the operation he said to me: "Doctor, I may be very foolish, but I cannot resist the conviction that the division of my strictures has resulted in the cure of other troubles which greatly annoyed me. The relief to the pain in my back and groins I can understand, but, that it should affect the cure of *distant* troubles, I do not. For more than a year past, I have been subject to occasional sudden loss of power, in my right wrist and hand, which I have been much alarmed about, fearing it the result of some brain trouble, especially as, during the same time, there has been a sort of ticking sound in my head on the same side. The least exposure to cold would bring on a loss of power of my right fore finger, which, at such times, was quite blue up to the first joint, and bloodless up to the second. Since the operation, the *paresis* as well as the *noise in the head* have entirely left me, and there has been no loss of circulation in the finger, although the exposure to cold has been greater than before." It is now more than four months since this statement was made. The doctor is still under my care, suffering from a chronic pyelitis, and has had no return of his troubles, either of head or hand, and is simply positive, that the relief from these nervous phenomena is due *solely* to the relief from his urethral contractions. If we accept the occurrence of spinal irritation as a possible result of chronic irritations in the genito-urinary apparatus (and there is no lack of evidence in the literature of the subject to prove this), we can readily understand how, from this point, irritations may be transmitted to the most distant parts of the sympathetic and motor nerve distribution. The cases reported by Dr. Sayre, and those which I have just added to the list, prove the fact that irritations located in the genito-urinary tract are capable of producing and not unfrequently do produce grave spinal disturbance.

The first printed matter on the subject of reflex irritations of the genital organs that has come to my knowledge is the *Paper by Dr.*

Sayre on Reflex Paralysis produced by Phimosis and Adherent Prepuce, published in 1870, and I think he is justly entitled to the honor of having initiated the interest in this subject, which, as soon as the frequency and gravity of such cases come to be fully understood, will rank among the most important in the whole range of surgical science.

APPENDIX.

Since this report was presented to the Association, two additional cases have come under my notice, which are appended to this report.

I have also received many letters from different physicians whose observations so correspond with my own that I have added a few of them to this report, as I was authorized to do by a resolution passed by the Association at the time the report was read.

CASE I.—Thos. Burns, aged three years and eight months, was brought to me by Dr. P. Brynberg Porter, of 65 W. 48th Street, on the 1st of June, 1875, to be treated for paralysis of the lower extremities and prolapsus of the rectum.

The doctor had detected the phimosis and constant priapism, and, suspecting that it might possibly be the cause of his trouble, brought him to me for examination.

The child was very peevish and fretful, very costive, and the

mother states that "in straining at stool and in making water his bowel would frequently come down, and give her great trouble in pushing it up."

He began to tumble down very frequently about a year ago, and was growing more and more clumsy in walking. He could not stand alone without support, and even when supported his legs would bend in different directions, as seen in Fig. 5, from a photograph by O'Neil, June 1, 1875.

Fig. 5.

He was circumcised on the 2d of June. The lining membrane was firmly adherent to the glans, requiring section by the knife before it could be torn off. Behind the corona was the usual hardened smegma, which had produced erosion of the mucous membrane.

The parts were dressed with an oiled rag and cold water.

June 4. The boy could stand without support, and had slept quietly the past two nights.

At the end of twelve days he was entirely well; could walk and run without tripping, and his bowels had become perfectly regular without any prolapsus.

The annexed photograph by O'Neil, July 1, shows the improvement in his limbs.

Fig. 6.

In the picture taken June 1, his shoes had to be laced tightly around the ankle to enable him to stand even with support; but in the last picture, July 1, it will be seen that he stands erect without any assistance.

One of his limbs is slightly abducted in the photograph, but that was on account of his restlessness, but is not so constantly.

CASE II.—John Lovatt, aged three and a half years, brought to me for treatment, September 25, 1875, by Dr. E. D. Morgan, Jr., with the following history: Began to walk when nine months old; walked very well for three months, when mother noticed that he was somewhat lame in left leg, and was very restless at night, wanting to sit up all the time. Electricity and liniments were used without relief.

Present condition—Slight atrophy of left leg. Child very clumsy, continually falling down; foot everted; is sustained by an iron brace on outside of the leg, fastened to an iron sole inside the shoe. Penis very small and in a constant state of erection; meatus very red and papulous.

Diagnosis.—Partial paralysis due to phimosis.

Treatment.—Prepuce slit. Mucous membrane torn back. A thick roll of sebaceous matter removed from behind the corona. No hemorrhage. Dressed with cold water.

Sept. 30, 1875. Child returned very much improved. Walks without the brace, does not fall down, and mother states that yesterday, for the first time in two years, the child ran around the room alone. Appetite improved. Sleeps better than ever before.

LONGVIEW, GREGG COUNTY, TEXAS, June 8, 1875.

Dear Doctor: I take the liberty of mentioning a case of circumcision, which was presented me yesterday, and it being one of curiosity and novelty, performed by a gentleman of our profession possessing some ability, I deem it not amiss to ask your opinion, and narrate briefly its history.

Patient, J. D., aged about 27, white. Health good; habits irregular, and accustomed to dissipation. Has had syphilis (secondary), now suffering from periostitis. Being desirous of circumcision he sought surgical relief, thinking his chances would be lessened if not destroyed against a further attack (syphilitic). About six weeks ago he submitted to an operation; and such were the proceedings as related to me, etc.:—

Anæsthetized. A circular incision enveloping the entire penis was made behind corona glandis about one-quarter of an inch, through integument and adjacent tissues; further back toward abdomen on body of penis, the distance of an inch or more, another incision was made as the former, and completely encircling the entire body. This intervening space between the two incisions was dissected up and removed, and the anterior integument was brought back, and stitched to that on the body of the penis, dressed, etc.

In about four weeks the parts were well, having united by first intention, leaving a dense, hard, girdling, cicatricial tissue about opposite the first circular incision. This cicatrix feels hard and

whipcord in nature, and is even, and smooth, and regular in outline. It is free from pain and tenderness when the organ is quiet, and the integument is movable to and fro, etc.

On each orgasm the parts are girdled, and the most intense pain is felt until the organ has returned to a calm and quiet condition. The cicatricial band becomes stationary in each orgasm, and is a fruitful source of constant irritation, keeping the organ erect, and *his locomotion has been impaired.*

The glans penis is cyanotic, presenting evidences of strangulation, etc. The meatus is large and free, admitting easily of a No. 12 bougie when organ is quiet.

Having for a long time patiently reviewed your lectures per my notes, and finding this process of circumcision not mentioned, and thinking it may offer some consideration for the thoughtful, I have briefly mentioned the matter to you.

Yours truly,

J. H. ADAMS, M.D.

The italics in this case are mine. I wrote the Dr. advising him to watch the case for a few months, and observe if the paresis increased, and then to divide the cicatricial band in a number of places, so as to relieve the strangulation.

I received the annexed letter in reply, which fully explains itself.

LONGVIEW, GREGG CO., TEXAS, June 25, 1875.

Dear Doctor: I have received your interesting and explanatory letter, and proceed to answer.

The subject of my last letter, Mr. J. D., has suffered much, and owing to this, I have nicked the penis in six places, and think it will eventually prove to be of benefit to the young man. I had hoped to witness its effects, girdled as it was, for several months, as you requested, but I was obliged to relieve him of his suffering, and operated on the 22d inst. No symptoms of cellulitis, and doing well, etc.

Since the operation he has slept well; has had no erections, and expressing himself in "perfect bliss." *The impairment in his locomotion from date of my writing till operation, was progressively increasing;* and I am convinced by its rapidity he would have suffered from complete paralysis of lower extremities in a few

months; his digestion had become greatly impaired, and the continuous erections had completely changed him, physically and mentally. His bowels were constipated, obstinately so, but were relieved daily by injections. The lower extremities have a spongy feel, imparting to the sense of touch a boggy sensation. Greater weakness was referred to medio-tarsal junction of left foot, and more general in the whole of the right leg, having no special location, etc.

Examination of his urine from the time he came under my charge had averaged 24 ounces daily, and highly acid. Since the operation it has increased to 43 ounces, and yesterday and to-day 49 ounces and normal; bowels act of their own accord; appetite good, *and muscular power of lower extremities perfectly restored.*

Yours truly,

J. H. ADAMS, M.D.

ATTICA, FOUNTAIN CO., IND., Aug. 31, 1875.

Dear Doctor: I send you the following report of a case, as you requested the members of the American Medical Association, at Louisville, to do:—

Mr. John McGuire and wife, of our town, have but one child, a boy of fourteen months, who has been the terror of all this part of the town for six months, as he cries continually except when asleep or nursed by his mother. He would lay perfectly quiet and squall; not showing any disposition to sit up, nor did he like to be raised up. He was very nervous, and would have times when his limbs would be rigid. This state of things grew worse until Wednesday last, Aug. 25th, when the family physician was called in, and found the child with fever and suffering from great nervous excitement. He pronounced it a case of remittent fever, and gave medicine accordingly, but to no purpose, as the fever and excitement increased, and the child had spasms frequently, and particularly when his bladder needed emptying; at that time the child would strain and cry, giving evidence of great suffering, and had a tendency to prolapse of rectum. It would have several spasms at these times, which would come on rapidly and grow more severe at each succeeding time. Late Saturday night, Aug. 28th, in the absence of the family physician, I saw the child, and found paralysis of the lower half of the body, not very marked, but sufficient to be easily diagnosticated, also spinal irritation. I

at once examined the penis, hoping to find a case of phimosis, and sure enough I did; I had the family physician called as soon as possible, and before leaving the house that night I introduced a small grooved director into the prepuce and laid it open with a bistoury. This exposed the glans penis inclosed in a sheath of mucous membrane; the latter adhered to the glans so tightly that I had to use a sharp instrument to get under it, and even after I got a place started I could hardly separate the two; I persevered, and finally exposed behind the corona glandis a roll of sebaceous matter of a cheesy consistence, and about the size of a cotton shoe string, extending almost around the penis. I removed this, and, after making a free incision of the mucous membrane, I washed away the remaining debris and applied water dressing, and in a few minutes left the child almost asleep, not near so nervous, and seemingly in a condition of well feeling. I used no internal remedies, and now, three days later, the child has made marked improvement and bids fair to make a rapid and complete recovery. The gland, while in the grasp of the mucous membrane, was about one-third its natural size, and I think the contracted scar tissue, the result of inflammation, was the cause of the whole trouble. If you desire it, I will report the progress of the case.

Very truly yours,

T. F. LEECH, M.D.

My Dear Doctor: Of a number of cases of reflex paralysis upon which I have performed circumcision, I desire to send you the account of one demonstrating remarkably the rapid curative effect of the operation. Some time in April last, a boy fourteen years of age was brought to me, supposed by his friends to be suffering from chorea. There was intense hyperæsthesia of the skin over the whole body, very marked want of co-ordination of motion in the arms and hands, and great difficulty in walking. The youth was so uncertain in his gait and had fallen so frequently that he was afraid to attempt to act alone. He had been suffering in this way for three years, becoming gradually worse, and was mentally below the average of boys of his age. Having taken medicine in large quantities and sugar of milk adulterated infinitesimally, for a long while, his attendants were surprised, after I examined his penis, with my opinion that circumcision would cure him.

The operation was performed that afternoon; the next morning

the boy was relieved of his hyperæsthesia, and in forty-eight hours had recovered entirely the use of his limbs. He is now at school, which he had not been able to attend in three years, and was so altered in appearance, when I met him on the street last week, that I scarcely knew him. I have the notes of a number of other cases, less striking in their features and rapidity of cure, but all demonstrating the correctness of the views you hold of the pathology of the disease.

Very truly yours,

JAS. S. GREEN, M.D.,
Elizabeth, N. J.

To LEWIS A. SAYRE, M.D.,
285 5th Ave., New York.

EXSTROPHY OF THE BLADDER.

By C. B. KING, M.D.,
OF PENNSYLVANIA.

Wm. J. Kilpatrick, aged 13, was admitted to the Western Pennsylvania Hospital, at Pittsburgh, April 10, 1874, for congenital deficiency of anterior wall of abdomen and bladder.

The posterior wall of the bladder projects forward, and forms a tumor about the size of a goose's egg, oval in shape, measuring 2¾ inches across from side to side, and 2¼ inches from above downwards. In the erect position the tumor protrudes 1¼ inches, and measures around the oval from side to side 4¼ inches. No hernia. Pubes wanting 2¾ inches. Penis epispadic, about the size of an almond, and covered with an imperfect prepuce. Scrotum quite small, and contains two well-developed testicles.

For some time previous to the operation, the patient was put upon tonics and nourishing diet with gentle out-door exercise.

May 3. He took an ounce of castor oil which operated freely. The following morning the lower bowel was washed out by enema, and the patient being put under the influence of ether, a horseshoe-shaped incision was made; beginning about one and a half inches to the left, and a little above the penis. This incision was carried down close to the left thigh, then across the perineum to the opposite thigh just in front of the anus, and then upward to a corresponding point on the right side. The flap was dissected up, laying bare the testicles. An oval incision was made in the flap to allow the penis to drop through. Another incision, beginning about three-quarters of an inch above the starting-point of the first incision, was made through the skin of the abdomen and extending around and about one-half inch above the upper edge of the bladder to a corresponding point on the opposite side. The skin was dissected up about three-quarters of an inch. The first flap was then turned up over the bladder, and its edges placed beneath

the last flap, and held in position by eight silver wire sutures secured by perforated shot.

As the walls of the abdomen were found to be very thin, the sutures were only passed through the two flaps, and thus differed from Prof. Pancoast's "tongue and groove suture," in having but two raw surfaces together instead of four. The urine flowed freely over the raw surface under the upper flap, but I did not fear urinary infiltration, as the opening made in the lower flap for the penis was large enough to allow free escape for the urine.

The skin remaining between the ends of the first and last incisions was now pared, and the raw surfaces united by two interrupted wire sutures on each side. The testicles being exposed, I attempted to close the large wound in the perineum by drawing the edges of the skin together, but the testicles still remained uncovered. The raw surfaces were dressed with lint spread in carbolized cerate. The knees were crossed and bandaged together, and the thighs flexed upon the abdomen, by placing him in a half sitting position in bed with a pillow under his knees to relieve the flaps of tension. As soon as he recovered from the effects of the anæsthetic, he was given an eighth of a grain of morphia, which was repeated at three and six P. M.

At 7 P. M. (six hours after the operation), pulse, 112; temp. 101° F.; suffers but little pain.

5*th*. 8 A. M., pulse, 122; temp. 101°. Slept well during the night. Feels comfortable. 8 P. M. An erythematous blush has made its appearance, extending toward the left groin. Is very sensitive to the touch, and has the appearance of urinary infiltration. Pulse, 128; temp. 102°.

6*th*. 8 A. M., rested well all night; blush not extending. Pulse, 132; temp. 101°.

7*th*. 8 A. M., blush has disappeared. Rested well during night. Takes nourishment well. Pulse, 130; temp. 101°.

8*th*. 8 A. M., pulse, 130; temp. 100⅛°. Dressings removed, and union found to be complete throughout. The bladder is very much protruded from accumulation of gas in the bowels. He was given f℥vj ol. ricini, followed by enema, which acted well, and relieved distension.

9*th*. 8 A. M., pulse, 124; temp. 100¼°. Rests well, and feels hungry. All the stitches but three were removed. The swelling, being much greater than was expected, caused three of the stitches to cut through, allowing the urine to escape through the openings.

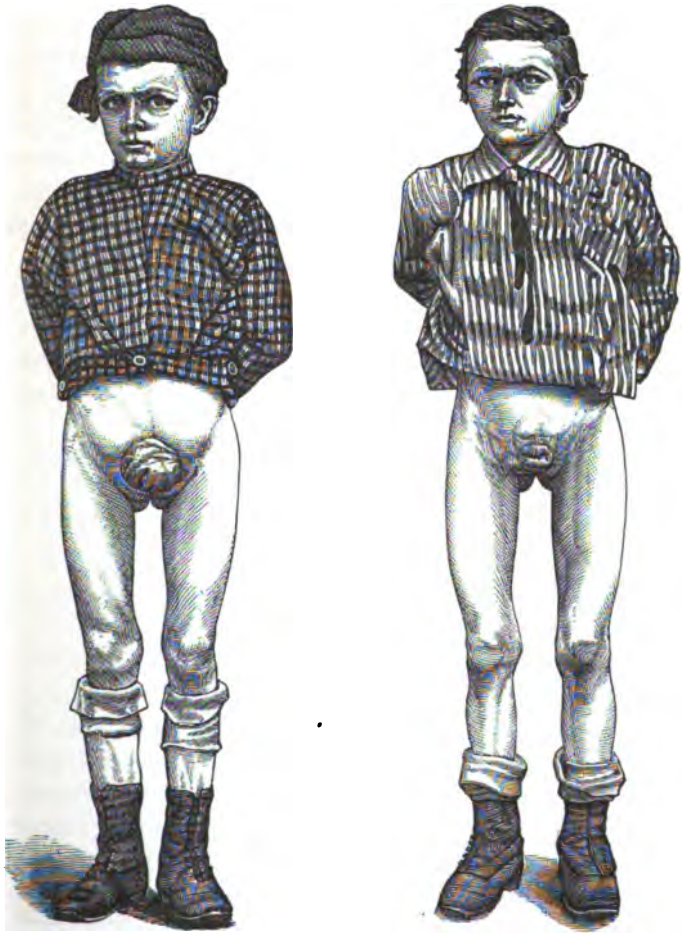
10*th.* Remaining stitches removed, and bladder washed out through a small catheter.

13*th.* Openings from the cutting through of stitches, through which the urine escaped, have entirely closed. Eats and sleeps well; suffers no pain. Flaps cicatrizing at edges.

25*th.* Large quantities of mucus collect in the bladder causing distension, and have to be removed with a syringe. Is sitting up to-day for the first time.

June 17. Has been walking about the ward since May 27. Flap has nearly cicatrized over the whole extent.

25*th.* Flaps and perineum completely cicatrized, the cicatrix in the perineum being quite small. By pressing the fold of skin



above the penis against the latter, he can retain his urine for two and a half hours. The greatest difficulty in the treatment of the case was caused by the very free secretion of vesical mucus, which distended the bladder and prevented the free escape of urine. No pain or inflammation was caused by the urine, which was allowed to flow over the exposed testicles and raw surface of the perineum, but it appeared to hasten cicatrization.

The boy at this date (April 25, 1875) is doing well. He is able to walk erect; he runs and jumps with ease; and by the use of a shield, the urine is collected in a bottle fastened to the inside of his boot, thus preventing his clothing from becoming soiled.

HYDRO-NEPHRITIS CAUSED BY THE FORMATION OF STONES IN THE PELVIS OF THE KIDNEYS.

By LEON J. WILIEN, M.D.,
OF INDIANA.

Wm. McM., aged 26 years, medium size, nervoso-bilious temperament, delicately constituted, puddler by profession, could give no information as to his family history regarding scrofulous, tuberculous, or cancerous diathesis. Engaged in the military service for two years in the late war, in a cavalry regiment, during the latter part of which he was thrown from a horse, the latter falling on him with its full weight.

Although severely hurt for a time, he entirely recovered from the injury, with the exception of a dull and deep pain in the left lumbar region, and some slight touches of hæmaturia, the latter disappearing entirely for the space of four years. In 1866, he resumed his profession, without ever complaining of the soreness in his side, and a gradual enlargement of the abdomen, which he says never caused him any distress whatever.

In July, 1874, he received a severe shock and contusion of his back and left side, while standing on a platform of a railroad car. This accident caused much pain, and, micturating a few minutes afterwards, he noticed a rather large quantity of blood discharged with the urine, this occurring repeatedly for about two weeks. At that time, he stated that he felt a tumor the size of a large goose egg, very painful on pressure and more or less movable, in the left side. He returned to Terre Haute, and continued working until Saturday, the 20th day of February, 1875, when he suddenly fell against a sheet of iron, which caused momentary loss of consciousness. From that time his sufferings increased, and on Monday, the 24th of February, we were called to see him, and found the following symptoms: Decubitus dorsal, body emaciated, features pinched, eyes sunken, skin hot and dry, pulse small and depressible,

120 a minute, tongue red and dry, vomiting of bile and frequent eructations of gas, breathing short, a painful sensation of tension of the abdomen, bowels constipated, urine scant, lightly tinged with blood, and of a very strong ammoniacal odor. Abdomen greatly distended, especially on the left side, where a tumor could be discerned by the eye; this one could be easily limited by palpation and percussion, appearing semi-solid on pressure, with evident fluctuation.

The shape of the tumor was similar to that of a kidney, with a very smooth surface, extending longitudinally from the pubis to the sixth intercostal space, measuring 15 in. Its lower transverse diameter measured 10½ in. from the left crest of the ilium to within 3 in. to the right of the median line; its upper transverse diameter from the ensiform cartilage to its external limit 7½ in.

The antecedents and general symptoms, the shape of the tumor, and absence of any malarial disease gave us to suppose that this could not be the spleen; while, on the other hand, the rapid increase of the tumor, its shape, and the existence of blood in the urine led us to suspect a cystic degeneration of the kidney—its nature and cause being not easily ascertained.

Dr. J. D. Mitchell, being sent for, endorsed our diagnosis, and approved of the decision we had arrived at, to relieve the patient by an immediate puncture with a trocar about two inches to the right of the crest of the ilium. The cyst was gradually emptied, discharging eight pints of a chocolate-colored liquid, rather thin, inodorous, and of alkaline reaction, depositing, after standing a few minutes, a bloody sediment. After this the patient seemed to improve, the tumor having receded, leaving the abdomen still distended by intestinal tympanites; a castor-oil emulsion with spirits of turpentine was then given, a tablespoonful every three hours until the bowels were evacuated. This took place during the night of the 24th of February, after which the patient went to sleep, having taken ¼ of a grain of sulphate of morphine, with free administration of beef-tea and brandy. To remove pain in abdomen, we ordered the following liniment: ℞. Spts. turpentine, tr. belladonna, tr. opium, comp. spts. lavander, and tr. camph., of each one ounce. To be applied freely over the abdomen every three hours.

The pain which the patient felt in the bowels was not from any apparent local irritation or circumscribed peritoneal inflammation, but a mere malaise. The apparent improvement in the general

symptoms, for a few days after the puncture, did in no way retard the rapid refilling of the emptied cyst. On the 10th day of March, we again found ourselves obliged to endeavor to procure relief for our sufferer by making a second puncture, near the spot where the first was made; but not with the same satisfactory results. After about three quarts of a light-colored fluid, very thin and inodorous, had escaped, it was immediately followed by a thick grumous (or, rather, gelatinous) substance, there being about one pint of it evacuated. The sufferings of the patient were in no manner relieved, excepting the discomfort arising from the enormous distension caused by the cyst. On the 14th of March the cyst had refilled, and the patient kept on sinking rapidly. On the 18th of March we made the last puncture, which resulted in the discharge of blood and pus—one quart in all.

The patient gradually grew worse, with all the symptoms of circumscribed peritonitis, with general emaciation, and he expired on the morning of the 22d of March, at five o'clock.

Autopsy, twenty-four hours after.—Body greatly emaciated, skin yellow, cadaveric rigidity complete. The opening of the abdominal cavity disclosed a tumor, as already described, situated in the left side, and extending from the ileo-pectineal eminence upwards to the sixth and seventh intercostal space, transversely from the crest of the ileum to three inches to the right of the linea alba, 10 inches in all. In the centre near the hilum 7 inches, and its upper and transverse diameter 8 inches. Our diagnosis proved correct, for we had an enormous kidney before us, with a portion of the ureter, which had acquired its vast size on account of the formation of stone in the pelvis of the kidney, and a smaller one which obstructed the flow of urine into the bladder near its cystic connection with the ureter. The stones therein found we here exhibit, the larger one weighing over one ounce, and the smaller about three drachms.

This tumor had formed complete adhesions with the whole peritoneal surface, anteriorly, laterally, and posteriorly; internally to a portion of the omentum, pancreas, and more so with the colon descendens in its whole length down to its sigmoid flexure, being nearly imbedded in the tissues. The spleen was partly adherent, but of normal size, pushed against the diaphragm; the lower part forming in fact but one continuation to the bladder. The ureter measured about ½ in. in transverse diameter, and was of a cartilaginous formation. The renal artery and veins were greatly

enlarged. The walls of this cyst were very thin in some parts, with a total absence of cortical tissue, a small trace of the tubular substance, and the cartilaginous portion of the pelvis and calices intact, although enormously distended. After the removal of the tumor, we also secured the right kidney, which externally presented healthy appearances, although much larger than in the normal condition, the cortical substance breaking easily under pressure of the finger.

In making the section to lay open its pelvis, we felt a hard substance, which, when struck by the scalpel, proved to be a large yoked stone, occupying the whole cavity of the pelvis, measuring about $2\frac{3}{4}$ by $1\frac{1}{2}$ inches, and weighing about two ounces.

The other viscera were all in a more or less healthy condition, excepting the bladder, which had undergone a fibrous induration near the entrance of the left ureter, near which one of the calculi was found.

The points of interest to us in this case were the following:—

I. The reticence of the patient for so many years, without ever suffering from any irritation of the bladder, or calculous nephritis.

II. The perseverance at work, and healthy condition of the digestive organs, until four weeks before his death.

III. And lastly the little evidence of inflammation until the two last weeks of his life.

ON AUSCULTATION OF THE ŒSOPHAGUS.

By LOUIS ELSBERG, M.D.,

PROF. OF LARYNGOLOGY AND DISEASES OF THE THROAT IN THE UNIVERSITY OF NEW YORK.

An addition has been made to our means of diagnosis in case of disease of the œsophagus, which consists in making the patient go through the process of swallowing, the physician listening to the sounds thereby produced. This method of auscultation of the œsophagus is so easy, and its results so instructive and valuable, that it cannot be made too widely known. It was first introduced less than five years ago by Dr. W. Hamburger, a practitioner in Bohemia, and has proved of incalculable importance to all who use it. But, although exceedingly easy, it requires, as Dr. Morell Mackenzie, in a clinical lecture at the London Hospital, has recently justly said, considerable practice and much patience: "practice, because it is requisite to get the ear well accustomed to the œsophageal sound in health; patience, because in each case of disease it is necessary to apply the stethoscope successively down the whole length of the œsophagus, and to listen attentively at each spot." You know the œsophagus is about 9 inches long, and situated behind the windpipe and in front of the vertebral column partly in the neck and partly in the chest. It extends from the pharynx, on a level with the lower border of the cricoid cartilage, opposite to the 5th cervical vertebra, to the cardiac orifice of the stomach, on a level with the 9th dorsal vertebra. It makes two curvatures to the left side, one at the root of the neck and the other as it passes forward to the opening in the diaphragm. Its diameter is nearly an inch, when fully distended; but in the quiet condition, it is disposed of in rugæ or folds. In order to locate it for the purpose of auscultating it, you must remember that it commences about an inch above the so-called vertebra prominens (the 7th cervical), and terminates a little below the level of the lower border of the scapula. (See *Figure.*) You must auscultate it both in the

neck and in the thorax: in the neck by means of the stethoscope; in the thorax either with or without the stethoscope, but the sounds are heard more distinctly if the ear be pressed directly against the naked back.

The patient being ready, direct him to take, and hold in his mouth, a good mouthful of liquid, plain water or fluid a little thickened, such as gruel or arrowroot; apply the stethoscope or ear over the portion of the œsophagus to be examined; make a sign to the patient to swallow; and listen.

On the side of the neck, a loud gurgling noise, a metallic "gloo-gloo" sound is heard, the so-called "pharyngeal sound," which is due to the commingling of air with the swallowed liquid, and which is sometimes so loud as to drown every other sound even much lower down. But usually in the whole of the thorax, the true "œsophageal sound" becomes audible. This is distinctly the sound of the rapid descent of a small spindle-shaped body of soft consistence. Dr. Hamburger goes further; he describes the sound as characteristic of an egg-shaped body, about an inch in length and half an inch in breadth, the small end of the egg directed upward and the large end downward; this is a refinement of perception to which few will attain, but this refinement is not needed to gain valuable information from the practice of the auscultation. I have said that sometimes the pharyngeal sound is so loud that it obscures every other sound; but, generally, the œsophageal sound can be distinctly made out even high up over the œsophagus, more plainly, it is true, lower down, say on the left side of the first dorsal vertebra and below. The relative intensity of the pharyngeal over the œsophageal sound is diminished by the patient taking a continuous draught of water.

There are four points to which attention is to be directed in clinical auscultation of the œsophagus: viz., the character of the œsophageal sound; the rapidity of the descent of the bolus; the direction which the bolus takes; and the shape of the bolus.

I. The character of the œsophageal sound is the point most readily appreciated. We may find in a patient, that the sound, at a particular point, becomes feeble, is modified or stops; while it is distinct enough above that point. This may come from, 1, stricture; 2, impacted foreign body; 3, retention of the bolus in the pouch of a diverticulum; 4, organic dilatation; 5, paralysis, and 6, rupture. I could cite a number of cases from my own practice in

which the precise seat of one of the first four of these pathological conditions was revealed by the method of auscultation. I have not met with any case of paralysis confined to a definite portion of the œsophagus, nor of rupture.

There may be a grating or friction sound, which indicates roughness of the inner surface of the œsophagus, such as might accompany croup, large ulcers with ragged edges, polypous excrescences, etc.

II. The rapidity of descent of the bolus. As the larynx ascends at the commencement of the act of swallowing, it is very easy to ascertain the precise moment of this commencement, by placing the thumb and index finger upon the upper edge of the thyroid cartilage. The time which elapses between the rising upward of the thyroid cartilage and the arrival of the bolus at the portion of the œsophagus auscultated can then be determined. We find that in disease the normal rapidity is diminished, but accurate detailed observations are still wanting on this point.

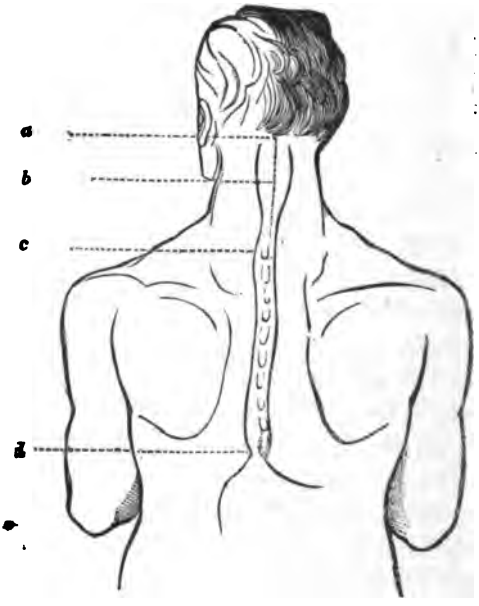
III. The direction which the bolus takes. Instead of passing vertically downward, the bolus may descend in an oblique direction toward the left or the right side, or rise up again. The oblique deviation may be due to aneurism of the aorta or to exostosis of the vertebræ; the mode in which the rising upward or regurgitation takes place, sometimes enables us to distinguish between a spasmodic and an organic stricture: for, in an organic stricture, an appreciable time elapses before the food is forced upward, in spasmodic stricture the regurgitation is instantaneous.

IV. The shape of the bolus. I have stated that Dr. Hamburger goes so far as to describe the precise shape and size of the bolus as revealed by the normal œsophageal sound. He also describes alterations of the normal sound indicative of differences in the shape. He says, *f. i.*, that the lower end of the egg-shaped bolus is more and more blunted or truncated in proportion to the feebleness of the muscular contraction of the walls of the œsophagus; that in case of stricture at the cardiac orifice, the shape becomes funnel-shaped with the small end downward with frequent regurgitation, and that these deviations from the normal shape can positively be determined by the variation of sounds heard.

Whether this refinement of perception can be acquired or not, it is certain that auscultation of the œsophagus is a valuable addition to our means of diagnosis in the diseases of an organ which,

until recently, has evaded all efforts at physical examination except the single one by the bougie or sound.

In the neck the œsophagus is a little to the left of the trachea, and the stethoscope should be placed upon the left side of the neck. To assist in determining the proper place for auscultation on the back, I have had this diagram made from a wood-cut published by Dr. Morell Mackenzie in the London *Lancet* of May 30, 1874.



a. Inferior curved line of occipital bone, about five-eighths of an inch below the occipital protuberance.
b. Pharynx.
c. Vertebra prominens (seventh cervical vertebra).
d. Termination of œsophagus, opposite the ninth dorsal vertebra.

In conclusion, I beg leave to recommend to this Section the appointment of a special committee to report, at the next annual meeting of the Association, on the Means of Diagnosis at our command in diseases of the œsophagus.

OVARIAN TAPPING FOLLOWED BY A CURE.

By E. H. M. SELL, A.M., M.D.,
OF NEW YORK.

The subject, whose history I am about to present to this Section, is Mrs. Mary Z., who was born in Würtenberg, Germany, Feb. 16, 1849. As a child, she passed through the several diseases common to childhood. At eight she was run over by a butcher's wagon. At the age of twelve she suffered from chlorosis. She commenced to menstruate when about thirteen, and continued regular for six months, when, on getting off from an omnibus, she fell, and was both injured and frightened, after which she suffered from suppression of the menses for from six to eight months. She was married June 10, 1866, being then seventeen years old, and is the mother of five children. The eldest is eight, and the youngest two years and five months.

The first symptoms of ill health presented themselves during the last two months of her last pregnancy. These were pain and tenderness in her left groin, none in the pubic region, and pain in her left side during coitus. From her increasing size and general symptoms she considered herself pregnant.

About the middle of February, 1874, she was seized with pain and flooding, which a midwife and a physician, who were called, diagnosed "threatened abortion," and ordered medicine to "hurry on expulsive pains," doubtless a preparation of ergot. At this juncture my friend, Dr. E. J. M., was called to see the case, and diagnosed a fibroid tumor of the uterus and pneumonic solidification of the right upper lobe. The doctor then called me in consultation. On visiting the patient, I found her residing in a damp basement, No. 116 Eldridge Street, where she sold kindling wood. Her general appearance was cadaverous, complexion very sallow, and emaciation extreme, progressing from the date of her last pregnancy. The temperature of her body was high, and perspiration copious. Thickness of abdominal parietes not considerable,

no linea albicantes were visible, nor dilated veins. A bimanual examination revealed a tumor, which had considerable mobility, speaking against adhesions, extending a little above the umbilicus. Fluctuation not very perceptible, so slight, indeed, that Dr. M. did not make out and corroborate my diagnosis till five weeks later. There was no crepitus, and scarcely any tenderness on pressure, save in the left inguinal region. Percussion sounds were dull, except in the lumbar regions, where they were tympanitic. Auscultation of the abdomen gave negative results. The uterus was normally situated, movable, and the vagina also normal. She had leucorrhœal discharges, and has had them since her first confinement. She had neither dysuria nor incontinence, but complained of a smarting sensation on passing water. Urine very high in color, and deposited a sediment on standing. Her tongue was very much coated. She had no appetite; great thirst and considerable flatulence, constipation and diarrhœa alternating. There was great insomnia, due to dyspnœa. Her mental condition was disturbed and flighty, but not hysterical. Previous to her sickness she had suffered from facial neuralgia, of which she was entirely relieved. Her breathing was very much compromised. She had a strong cough, with some expectoration. Rested best on her left side; and also had an idea that lying on her affected side might improve her condition. Had a frequent pulse, and considerable palpitation of the heart.

Hereditary Influence.—Her father died young, when patient was yet a child. Her mother had the dropsy and some uterine trouble when thirty years old, but now enjoys health. She has no brothers, sisters, nor any near relatives. Has lived in New York since she came to America. Her mode of life has always been active, latterly with household duties, and assisting her husband. No moral causes were traceable, but the patient thought that the dampness of her abode had considerable to do with her sickness.

There was no vaginal fulness, no bearing down of uterus, save for two or three weeks after each confinement. Had no special pressure on the bladder, but could never retain her urine very long. The patient complained of pain in her left groin, numbness of her feet, and great weakness of her legs, but no nausea except on taking medicine. Up to this time she increased in size but slowly, yet her early symptoms were rapidly aggravated, and still she had rest from time to time. Several times she had had, when pregnant, tympanites, and frequent febrile attacks, but apparently

no cystic inflammation. She had no signs of peritonitis or ascites, nor any discharges pointing to a spontaneous rupture of the cyst either through the uterus, vagina, bladder, bowels, or abdominal wall.

Diagnosis.—A simple unilocular ovarian cyst on the left side.

Prognosis.—As the patient was apparently fast declining from a pulmonary and throat affection, suffering greatly from dyspnœa and high fever, our prognosis in the case could but be unfavorable; hence we recommended tapping the cyst in preference to ovariotomy, enjoining a strong tonic treatment, remarking that, should she survive and the cyst refill, tapping might be repeated several times if necessary, and, should her health at any time justify an operation, then perform ovariotomy. The tonic treatment was adopted, but, our diagnosis not being accepted, naturally excluded tapping for the time being. We remarked on parting, that, whenever our diagnosis was accepted and our presence requested, we would be ready to tap. This time came, but not till five weeks later.

On March 28, 1874, Dr. M. called upon us, saying that he had accepted our diagnosis, and requested us to revisit the patient with him, being prepared to tap if we thought proper. We found the patient, now living with her mother at No. 126 1st Avenue, very much larger than five weeks previous; the tumor pressing out the sternum and floating ribs; the dyspnœa, being much greater, necessitating almost an upright position of the patient. We were requested by her and her mother to do what we thought best. Hence, after dividing the skin, we tapped, using the valuable trocar of Mr. Charles Thompson, of Westerham. We obtained fourteen pints of a greenish viscid fluid, which, being microscopically examined, revealed, besides several of the contents usually found in a unilocular ovarian cyst, a large amount of pus. The tapping at once relieved the dyspnœa and insomnia. The tonic treatment was continued, and the patient's health rapidly improved.

Nevertheless, the cyst rapidly refilled, and in three weeks thereafter a tumor of the size of an orange was perceived at the point of tapping, which spontaneously broke and discharged large quantities of the same kind of fluid. Thus the cyst refilled and discharged itself every two or three weeks some eight or ten times, flowing generally about two days, the quantity gradually decreasing till it finally ceased altogether, leaving only a small scar at the

place of the puncture, three fingers' breadth below the umbilicus, in the linea alba.

On visiting the patient, April 2, 1875, more than a year after the operation, living at No. 343 East Ninth Street, we found her enjoying perfect health, without any enlargement, and able, besides doing her own housework, to go out washing and house-cleaning.

Remarks.—We consider this not a unique but a very rare case. Mr. Spencer Wells teaches that true ovarian single cysts (excessive growth of one Graafian follicle) are almost certain to fill again; while the extra-ovarian cysts (dilatation and growth of part of the remnants of the Wolffian body, or parovarium) are often radically cured by a single tapping.

The case under consideration was plainly a true ovarian cyst, as shown by its contents, which were albuminous, and contained: 1. Fatty granules varying in size. 2. Globular aggregations of various sizes. 3. A large quantity of small circular corpuscles, containing a varying number of fine black molecules, like the exudative cells of Henle (exsudats' zellen). 4. Cholesterine crystals. While the contents of parovarian cysts, according to Mr. Wells, consist of little more than pure water, with scarcely any albumen, or only a little albuminate of soda.

Again, this cyst did refill itself several times, but, as it discharged itself spontaneously, we are justified in saying that a *cure* followed a *single tapping*, showing us the importance of trusting to tapping, at least in some cases, of true ovarian single cysts, and especially where the physical conditions of the patient contraindicate ovariotomy.

MINUTES OF THE SECTION

ON

STATE MEDICINE AND PUBLIC HYGIENE.

MINUTES OF THE SECTION

ON

STATE MEDICINE AND PUBLIC HYGIENE.

MAY 4, 1875.

The Section met at 3 P. M. HENRY I. BOWDITCH, M.D., of Massachusetts, Chairman of the Section, presided.

The Secretary, Dr. HENRY B. BAKER, of Michigan, not having yet arrived, Dr. A. N. BELL, of New York, was made Secretary *pro tem.*

Reports of committees were called for, but the chairmen were not yet ready to report.

The Secretary then appeared and assumed his duties.

The following named gentlemen were present: Drs. HENRY I. BOWDITCH of Massachusetts, HENRY B. BAKER of Michigan, A. N. BELL of New York, J. H. VANDEMAN of Tennessee, B. H. CATLIN of Connecticut, S. A. FOSS of Kentucky, T. B. GREENLEY of Kentucky, B. B. LENOIR of Tennessee, SAMUEL LILLY of New Jersey, A. J. ERWIN of Ohio, JOHN H. RAUCH of Illinois, J. J. QUINN of Ohio, JOSEPH WILSON of the U. S. Navy, H. A. JOHNSON of Illinois, WILLIAM FAULDS THOMS of New York, A. B. STUART of Minnesota, J. S. BILLINGS of the U. S. Army, and R. SAUNDERS of Kentucky.

Reports of committees being again called for, the Secretary stated that no reports had as yet reached him; that the committee of which he was chairman—on *Form of bill for establishing a National Department of Public Health at Washington*—was not yet ready to report, that it might report before the close of this meeting.[1] Dr. STUART, a member of the committee on *Ventilation of Dwellings, School-houses, and other Public Buildings*, said he thought

[1] This committee did not report, and was not discharged. It expects to report to the Section at the next meeting of the Association.

Dr. Kedzie, the chairman, had prepared a report, and that it would come before the close of the meeting.

Dr. A. N. BELL, of Brooklyn, member of the Section for New York, then read a report upon *Defective Drainage as a Cause of Disease in the State of New York.* The report of Dr. Bell being under discussion, Dr. BOWDITCH asked Dr. Bell in what manner he would construct a perfectly tight drain. Dr. BELL replied that for a sewage pipe he would have an iron pipe made tight by being lead-calked, and having traps for all inlets. A hard earthen pipe is sometimes used, but it cannot well be made so perfectly tight as the iron pipe lead-calked. Dr. THOMS asked what size and form he would approve. Dr. BELL replied that very large pipes were now condemned. The egg-shaped ones were in favor. Dr. A. J. ERWIN, of Ohio, questioned whether a proper system of surface drainage, combined with a proper system of scavenging, cannot be made to yield better results than the imperfect system of sewerage now employed in many of the smaller cities. Dr. BELL said that this had been adopted in some of the smaller foreign cities. Dr. ERWIN said that until a complete system of sewerage can be secured, better results may be expected from the safer system of drainage combined with the removal of garbage. Dr. RAUCH, of Chicago, asked Dr. Bell if he thought the Albany Committee were warranted in attributing the deaths from consumption to imperfect drainage. Dr. Bell was also asked if the cases of scarlatina were fairly attributable to bad drainage. Dr. BELL replied that although those diseases may not be thus caused, deaths from them may be very greatly increased by bad drainage. Dr. BOWDITCH spoke of the ventilation of sewers, privies, etc., by conveying the gases up to the tops of houses. He suggested the question whether the gases are properly disposed of in that manner. Dr. QUINN asked if sewer gases are dangerous when discharged at the tops of houses, and when escaping at the street level, is there not some method whereby they may be safely disposed of? Dr. —— thought that when the ventilating shaft extends high enough the danger from this source is not great. Dr. RAUCH suggested that a shaft is not necessarily a ventilator; the motion of the air therein might sometimes be downward.

A report on *Climatology and Diseases of Nebraska*, by Dr. JAMES H. PEABODY, of Omaha, was then presented and referred to the Secretary to be reported the following day.

Dr. THOMS, of New York, read a paper on *Floating Hospitals.*

His paper was illustrated by drawings and charts. He offered a resolution which occasioned much discussion. Dr. Thoms thought that if the attention of the profession was called to it, this would be found to be a satisfactory method of giving the children of cities an opportunity of obtaining fresh and pure air. Dr. Vandeman thought that if the plan were adopted on the inland rivers in this vicinity, many deaths would result from intermittent fever and malarial diseases. Dr. BOWDITCH remarked that although no floating hospitals were used at Boston, they intended taking the children down the Bay to an island, and benefit was expected from it. Dr. THOMS said that his resolution only recommended these floating hospitals in those places where it is practicable, all things considered; that he did not advise the adoption of this method on inland rivers in malarial districts. Dr. S. A. Foss, of Kentucky, stated that in this city (Louisville) excursion trips on the river had been taken, and it was believed, with benefit, if confined to the time of daylight. Dr. Thoms recommended his plan as a means of avoiding the intense heat of summer in certain localities. He remarked that a cooler air is found on these floating hospitals than in the tenements in cities. Dr. WILSON, of the Navy, thought that malaria would never pass a continuous surface of water of one mile in width, that a river two miles in width might be traversed safely, even though passing through a deadly malarious region, if one did not go ashore at night. He maintained that it is the marshy bank of the river from which danger is to be expected. The resolution was slightly amended and adopted as follows: *Resolved*, That this Association approves of the system of giving patients the benefit of the pure air of our bays, lakes, and sounds, and recommends its adoption wherever practicable.

Dr. BOWDITCH, the Chairman, read a paper by H. P. Bowditch, Professor at Harvard University, on *A Plan for Recording the Growth of Children of Different Nationalities, in order to illustrate the Influence of our Climate.*

Dr. BOWDITCH presented certain papers, relating to a circular sent out by him as Chairman of the Section, and on motion they were referred to a committee of one, to report May 6. The Secretary was appointed such committee.

On motion the Section adjourned.

MAY 5.

The Section was called to order by the Chairman. The following named gentlemen were present: Drs. C. S. TUCKER of Michigan, A. N. BELL of New York, S. A. FOSS of Kentucky, J. H. VANDEMAN of Tennessee, WM. ABRAM LOVE of Georgia, D. W. HAND of Minnesota, WM. S. EDGAR of Missouri, S. LILLY of New Jersey, GEO. S. HANCOCK of Indiana, A. D. PRICE of Kentucky, A. HAZLEWOOD of Michigan, JOSEPH WILSON of Massachusetts, HENRY B. BAKER of Michigan, A. B. STUART of Minnesota, J. S. BILLINGS of the U. S. Army, JOHN H. RAUCH of Illinois, MARTIN STEVENS of Ohio, A. G. SMYTHE of Mississippi, J. J. QUINN of Ohio, F. A. SEYMOUR of Indiana, A. W. STINCHFIELD of Minnesota, THAD. M. STEVENS of Indiana, HENRY JAMESON of Indiana, and WILLIAM FAULDS THOMS of New York.

The report of the Committee on Ventilation was received and referred to a committee consisting of Dr. A. N. Bell, to report the following day.

The Secretary was asked to report regarding the paper, referred to him the previous day, relating to the Climatology and Prevailing Diseases of Nebraska. He reported having read the paper with much interest, that, being for a new State, the report was apparently not based upon very numerous or extended meteorological observations, but somewhat upon general impressions of the subject; that he regarded it a valuable contribution to the sanitary survey of the country. The report contains a statement of the total death-rate in Nebraska compared with that in other States, and of the death-rate from certain diseases compared in the same way, the statistics being taken from the Ninth Census of the United States. This method of comparison, although in accordance with the U. S. Census, he did not consider a proper one. He recommended that the paper be read in its order.

Dr. BELL then read his paper on *Hemlock Poisoning*. Dr. A. B. STUART, of Minnesota, remarked that the paper was one of great interest to him; that he had been called to examine into a case of poisoning which was supposed to have been caused by eating wild parsnip, but which proved to be *conium maculatum*. From the fact stated in this paper, that the heart weighed 19 oz., whereas Dr. Flint places the weight at about 8 oz., and Dr. Gray at from 10 to 12 oz., he thought that death in Dr. Bell's case was more likely to be from hypertrophy of the heart, which under the cir-

cumstances may have been complicated with engorgement of the lungs. Dr. BELL said that the evidences were conclusive to him that the death occurred from asphyxia; but as this was probably due to the hemlock, the jury rendered their verdict as reported.

Dr. EDGAR, of St. Louis, made some remarks, referring briefly to a case which occurred in his city some time since. The patient, a book-keeper, was not sane for months after taking a dose of medicine prescribed for him by a practitioner. The medicine prescribed contained extract of conium. On motion of Dr. BELL, Dr. Edgar was requested to write out a statement of the case and hand it to the Secretary for publication.

The Secretary read a paper entitled *Climatology and Diseases of Nebraska* by James H. Peabody, being a report on State Medicine and Public Hygiene for the State of Nebraska. Dr. BELL moved that the paper be referred to the Secretary for preparation and publication. Dr. BAKER said that if it was to be published, and he thought it should be, that part wherein comparisons are made between several States as to the death-rate from all causes and from certain diseases should be omitted in the publication. He said that any comparison which ignores the influence of sex and age upon the death-rate is not a fair comparison; that the death-rate from consumption is greater among females than males, and the proportion of the sexes is very different in the different States; that whereas in early life the death-rate from all causes may be ten per cent., and in old age from fifteen to one hundred per cent. of all living, in middle life it is only about one per cent. In any State, therefore, where the inhabitants are nearly all middle-aged males, there should be no very large death-rate—there should not even be sickness.

Dr. VANDEMAN moved, as an amendment to Dr. Bell's motion, that the part of the paper making statistical comparisons of death-rates in different States, be omitted in the publication. Some discussion followed, participated in by Drs. Vandeman of Tennessee, Bell of New York, and Love of Georgia, and the amendment and the motion as amended prevailed.

Dr. D. W. HAND, of St. Paul, then read a report on *The Diseases of Minnesota and the Northwest.* After brief remarks by one or two members, the paper was referred to the Secretary for publication.

Proceedings for the following day, May 6th, were announced as follows:—

1. Dr. Bowditch will exhibit and explain a *Diagram illustrating the apparent influence of Cloudy Days upon the proportion of Deaths from Consumption*—including a series of years from 1811 to 1867 inclusive.

2. There will be a report of certain papers and correspondence of the Chairman relative to the work of the Section, and to the establishment of a National Board of Health.

3. A partial Report of the Committee on Ventilation will also be presented.

On motion, the Section adjourned.

MAY 6.

The Section was called to order by the Chairman.

The minutes were read and also the programme for the day.

Dr. BELL reported back the papers on ventilation, recommending their reference to the Secretary for publication if found suitable. They were so referred.

A paper referred to the Section at the morning session of the Association, entitled *Climatological and Sanitary Report of Florida*, by Dr. JOHN P. WALL, of Tampa, was also presented and referred.

Dr. BAKER moved that the programme announced yesterday in this Section and this morning in the meeting of the Association be proceeded with, which motion prevailed.

Dr. BOWDITCH then proceeded to exhibit and explain a *Diagram illustrating the apparent influence of Cloudy Days upon the proportion of Deaths from Consumption including a series of years, from* 1811 to 1867, *inclusive.* The subject introduced by the Chairman being under consideration,

Dr. H. A. JOHNSON, of Chicago, suggested the desirability of combining with the data illustrated, an exhibit of the rain-fall.

Dr. A. N. BELL suggested that possibly this was another illustration of the influence of "soil moisture" upon consumptives; this being coincident with cloudy days.

Dr. J. S. BILLINGS spoke of another element besides sunlight influencing in the same direction, viz., indoor life induced by cloudy weather, including the influence of impure air through defective ventilation. As regards light he thought a distinction should be made between acute diseases where bright light was frequently a stimulant to be avoided, and certain other diseases wherein it was desirable; in some hospitals, arrangements have been made for sun-baths.

Dr. CHAS. DENISON, of Denver, Col., said this was a subject of great interest particularly to him, who came from a locality where sunlight and fresh air are regarded as important elements in influencing consumptives favorably. In Colorado, those who get out doors, derive benefit, while those who remain indoors do not derive so much. He mentioned an unsuccessful experiment at the Mammoth Cave, in Kentucky, where it was assumed that the equable temperature would benefit consumptives. So many deaths occurred that the experiment was soon abandoned. He spoke of the relative humidity as a question which could be, and is being, determined at many points, and which would indicate rain fall, cloudiness, etc. He asked about humidity as connected with altitude.

Dr. BILLINGS spoke of the influence of altitude and dryness of air upon consumptives. He said that officers and others on the Pacific coast have a saying, that if a patient can endure the conditions at all they are improved.

Dr. ——— asked if statistics had been collected of miners who live without light and in the presence of moisture.

Dr. BILLINGS remarked that there were such statistics, but that the conditions of bad ventilation, etc., were so complicated as to interfere with arriving at conclusions therefrom. He spoke of experiments with compressed and with rarefied air in the treatment of disease.

Dr. BAKER said that, although several had mentioned relative humidity, he wished to suggest the importance of ascertaining the absolute humidity of the atmosphere, and its influence upon the body, without so much reference to the question as to whether moisture was from the soil, or from any other source. He mentioned tables in the Vital Statistics of his own State (Michigan), which seemed to show a marked influence of humidity upon deaths from consumption, and especially the great influence of a dry atmosphere upon the mortality from pneumonia. He suggested that humid and dry air may act directly upon the lung surface, as well as upon the skin; and possibly in some other way than simply changing the amount of fluids thrown off. He said that Dr. Dabney, of Virginia, who had just left the room, had made some experiments which seemed to show that the blood-pressure, as shown by the cardiometer, is increased in a cold and damp atmosphere. He hoped the investigations of Dr. Bowditch would be continued, and also the experiments to which he had referred.

Dr. STUART remarked that he was keeping a record of meteorological observations together with prevailing diseases.

Dr. VANDEMAN moved that the Chairman be requested to continue his investigations and report to the Association at its next meeting.

Dr. BILLINGS remarked that Dr. Weir Mitchell has been making observations on the influence of meteorological conditions upon nervous affections, such as gout, neuralgia, etc. He suggested the importance of preparing questions for the purpose of furnishing work for the willing hands throughout the country. He mentioned a series of questions which are to be prepared for the American Public Health Association, as embodying nearly everything that can be asked concerning public health in the United States.

On motion of Dr. BELL, all papers presented to the Section were referred to the Secretary, who was directed to use his discretion in preparing and forwarding the same, with the minutes of the Section, to the publishing committee for publication.

On motion of Dr. BAKER, it was voted that in case the address of the Chairman—to be delivered the following day—be referred to this Section, it be forwarded to the Committee of Publication.

On motion of Dr. BELL, the Section adjourned.

HENRY B. BAKER,
Secretary of the Section.

ANNUAL ADDRESS IN STATE MEDICINE AND PUBLIC HYGIENE.

BY HENRY I. BOWDITCH, M.D.,
OF MASSACHUSETTS.

MR. PRESIDENT AND GENTLEMEN:—

According to the strict letter of our law I should prepare and read before you a "paper on the advances and discoveries made in public hygiene during the past year." I shall not do so, and in extenuation of my fault, if such it be deemed, I plead, 1st, that, in the discussion of the subject selected, I shall meet, to a certain degree at least, the requirements of the rule; and, 2d, in thus varying from a strict interpretation of the law, I am following the example of predecessors in office.

I propose for our deliberations:—

"*The Future Health Council of the Nation.*"

I use the epithet "*future*" emphatically and with a definite purpose, for I think that any attempt to establish a National Council until there are State Boards of Health in every State, will not only be premature but positively prejudicial to the very object which I trust we all would wish to gain by the establishment of a council, which will be an honor to our country, and the peer of any which may hereafter be inaugurated in Europe. Very much remains to be done on both sides of the Atlantic before we can hope for the attainment of this end.

PREVIOUS ACTION ON THIS SUBJECT BY THIS ASSOCIATION.

In 1871, Dr. Logan prepared resolutions, and they were adopted by the Association, embodying, among others, the following idea, viz.: 1st. That, when six States "shall establish by law State Boards of Health, initial steps be taken for the formation of a

National Health Council. 2d. That said Council shall be auxiliary to this Association, and constitute a special Section on Hygiene."

In 1872, a report was made upon these resolutions, and the committee asked to be continued. In the report, suggestions were again made to appeal to the Government to establish a department of health to be connected with the Government but under the surveillance of this Association.

The appeal to the Government was objected to by the Association, but the committee was continued as a special Section on State Medicine and Public Hygiene. (*Trans. Am. Med. Assoc.* 1872, p. 51, and 1873, pp. 29 and 30, also p. 408.)

In 1873, Dr. A. N. Bell offered a vote on the establishment of a National Sanitary Bureau. It was referred to the Committee on Hygiene. (*Trans.* 1873, p. 51.) At the same meeting Dr. Howard of Baltimore, from a special committee, reported a new organization of this Association, providing for a Section on State Medicine. This puts the Section on this subject under the same rules as those guiding other sections. (*Trans.* p. 28 *et seq.* 1873.)

In 1874, the project of appealing to Congress was again urged in the Section on State Medicine, and a resolution was passed to that effect by that Section. A committee was appointed to report, at the meeting of the Section this year, a bill for the purpose of establishing a National Department of Public Health at Washington.

It will thus be seen that this Association has wisely declined, as yet, to make any appeal to the National Government for this object; although the subject has been discussed freely in the Section, and at times at the meetings of the whole body of the Association.

IMPORTANCE OF THE SUBJECT, AND OF ITS BEING THOROUGHLY DISCUSSED.

We must all admit that only by fair, manly reasoning and steady work, not by frantic appeals to patriotism or to rapid and imperfect talk or work, can we gain a broad and firm basis on which a National Council can rest. So important do I deem this preliminary discussion and work in order that we may start rightly on any plan, that I would willingly devote years, if necessary, to the thorough discussion of it before attempting to organize a National undertaking. This business of governmental attention to

the public health is to be one of the great labors of the coming centuries in all civilized countries, and a properly devised plan for these United States, after ample consideration, is therefore all-important.

OPINIONS OF MY COLLEAGUES UPON THE SUBJECT OF STATE AND NATIONAL BOARDS OF HEALTH.

I sent a circular letter to each one of them. I desired to get their opinions upon the character of any future National Health Council which might be established, and when it should be established. I likewise wished to learn what had been done and was doing in each State in regard to the establishment of State Boards of Health. I considered the latter question as really fundamental in the inquiry relative to the former.

IMPERFECT RETURNS, AND REMARKS THEREUPON.

Including Massachusetts, the circular was sent to 36 States and Territories. From 28 have I received replies.[1] But six virtually gave no response, one circular being returned from the Dead Letter Office; another correspondent had moved from the State; a third was ill; two felt unqualified to give any opinion; and the sixth informed me of professional difficulties in his State, but gave no response to my questions. Twenty-two have more or less definitely replied.

One word here *en passant*. Are we really in a fit condition for a National Health Council, especially one to be under the guidance of this Association, as some have earnestly argued, when so many correspondents, all appointed at our last meeting as men *especially* interested in Public Hygiene in the different States, fail to respond to a very few simple questions requiring only a certain amount of reflection and scarcely an iota of solid work?

VARIOUS OPINIONS AS TO THE ESTABLISHMENT OF A HEALTH COUNCIL FOR THE NATION.

Of twenty-two correspondents, seventeen have answered with various degrees of earnestness for, or of indifference to, the project

[1] See Appendix A., Names of Correspondents.

of a National Health Council. These answers afford striking evidence of the indecision of the profession of the country as to our ability to establish such an organization at present.

Six are enthusiastically in favor of proceeding immediately, and of pressing forthwith the matter on the notice of Congress. One gentleman in his abundant zeal advances views which few of us, I think, would entertain as a whole, although we might agree to some of his details. He says that a Health Department of the National Government "would be *more* important than the Judiciary—that it could send a journal of health to every family in the Union—that all the people would consent willingly and without a dissenting voice to be taxed for its support!" and the writer adds that he "will, if wished, present working plans for such an institution." Another wisely says that such a bureau "would save millions of money." Another claims that a letter is too brief for details, "but let us have forthwith a convention and debate." One thinks that a National Board should be established in order to stimulate the formation of State and Municipal Boards. Others deem the subject very important, but they wish to wait until State Boards are formed. Another speaks of it as one of the greatest objects we can strive for—and says that it would do honor to the age and the country; in all of which I fully agree, provided that, after a thoroughly matured plan is made, it be commenced and carried on wisely. No amount of praise or of almost Utopian hope would I object to, provided that I could be sure of these preliminaries.

DOUBT OR OPPOSITION TO THE SAME PROJECT.

Five are doubtful of success, and their reasons are a "fear that political intrigue will settle the choice of health officers;" one says that "private self-seeking will destroy all good effects;" another that "men will seek the office not for the public weal, but for private pecuniary gain;" still a fourth fears that the General Health Department would interfere with and override State and Municipal organizations, which the writer thinks "would be a nuisance;" and the fifth is "afraid of the difficulty of arranging and getting good men, so that now certainly he would not be in favor."

Finally, one sees no need for the Council, because we have two

already, viz., "this Section of the American Medical Association and the Public Health Association."

WHAT A NATIONAL HEALTH COUNCIL SHOULD BE, ACCORDING TO THE OPINIONS OF MY COLLEAGUES.

These opinions may be classified as follows:—

1st. *Scientific Labor.*—The Council could not have too high an aim. It should study scientifically and carefully all the laws of health; the connection of meteorology with disease; vital statistics; and the facts of preventable disease. The causes of great epidemics should be investigated. It should employ experts to examine various endemic influences as exhibited under the different climates and places in our country.

2d. *Practical Work.*—The Council should collect all facts bearing on health, and draw together the facts made known by the various local boards, arrange and collect them.

3d. *Diffusion of Knowledge.*—It should publish reports, but only those which are real advances in public hygiene. It should have no long, voluminous documents compiled by means of the scissors or from one's own consciousness—papers not founded on fact. It should spread a knowledge of the rules of health generally, and of special diseases, as fevers, cholera, etc., and how they are to be avoided, etc. etc.

4th. *Advisory.*—The Board could suggest to Congress and the various States, laws in reference to health; quarantine; "for the prevention of prostitutes from China and elsewhere;" for drainage and the arrangement of public lands, thereby fitting them to be healthy abodes for future residents thereon.

WHEN, ACCORDING TO MY CORRESPONDENTS, SHOULD SUCH A COUNCIL BE ESTABLISHED?

Of seventeen answers obtained to this question, only two are for immediate action; three wish for it as soon as practicable. The remainder (twelve) advise more or less delay. Six of these twelve would wait until State Boards are generally established by legislative action.

DATA FROM MY CORRESPONDENTS ON THE ESTABLISMENT OF STATE BOARDS OF HEALTH IN THE VARIOUS STATES OF THIS UNION.

A knowledge of how many States had Boards of Health, or whether any efforts had been made to establish them, and their precise organization where legally established, I deemed of vital importance to the solution of the question of establishing a National Council. Accordingly I asked for information on these points. Only eight States (California, Georgia, Maryland, Michigan, Minnesota, Massachusetts. and Virginia) have been reported to me as having State Boards of Health. From other, and as I think accurate sources, I learn that Louisiana has one. Sixteen correspondents reply in the negative (Arkansas, Connecticut, Delaware, Kentucky, Mississippi, Missouri, Nebraska, New Jersey, New Hampshire, Ohio, Rhode Island, South Carolina, Texas, West Virginia, Wisconsin, and Vermont). *Five* of these (Nebraska, Ohio, Texas, New Jersey, and Vermont) are trying to induce their Legislatures to establish Boards. *Three* have already made ineffectual efforts (Kentucky, New Hampshire, South Carolina), and finally *five* (Mississippi, Missouri, Rhode Island, West Virginia, and Wisconsin) have never tried to establish one. In other words, of all these United States, only eight have State Boards of Health, while twenty-eight have nothing of the kind.

HOW ARE THE STATE BOARDS, ALREADY ESTABLISHED, COMPOSED, AND SHOULD THOSE HEREAFTER ESTABLISHED CONSIST OF PHYSICIANS SOLELY OR OF PHYSICIANS WITH THE LAITY?

Of the six States from which I have definite information on this matter, three (Georgia, Michigan, and Massachusetts) have a mingling of the two; the others are composed of physicians only. Allow me, in this connection, to refer very briefly to my own experience. *A priori*, I should have objected to the admission of the laity. The composition of the Massachusetts Board was decided upon by the Legislature after a plan laid down by a very accomplished sanitarian, a layman, twenty-five years ago. But the practical working of the plan in our Board has been so entirely satisfactory and there has been so much harmony, and yet diversity of opinions introduced by the combination of professional and lay members, that I am now a strenuous advocate of that combination.[1]

[1] See Appendix B, Sanitary Legislation of Massachusetts.

Having now given the chief results of my colleagues' answers upon these subjects, I propose to lay before you my own views, not a few of which are also those of various correspondents, of what should be the nature of

THE FUTURE HEALTH COUNCIL OF THE NATION.

Our country has an immense territory; extending over one hundred degrees of longitude, viz., from 65th (Maine) to the 165th (Alaska), by forty-five degrees of latitude, viz., 60th (Alaska) to 25th (Florida and Texas). It has its Atlantic and Pacific shores, and corresponding eastern and western mountain slopes. It has its vast internal valleys of the Mississippi and of the Utah countries; beside many smaller ones. It has lofty mountains where man is subjected to a rarefied, dry, bracing, and cool air. It has also its lowlands, with the warm, genial, moist, and, at times, close atmosphere of the tropics. It has fertile prairies and fields, and wide, arid plains. It has vast morasses and lagoons. All these various portions of our territory must eventually be brought under the dominion of the scientific thought and action of man. In the past and at the present time, over this immense tract of country hecatombs of human beings, as you are well aware, are annually sacrificed from ignorance of hygienic laws or from the wilful or ignorant neglect of government to take those precautions which, even with our present imperfect knowledge of public hygiene, could be taken.

To bring all this under the surveillance of a Sanitary Board or a Minister of Health is not the work of a moment. This most important object cannot be attained by any rapid descent upon Congress with petitions, while it is wholly ignorant of public hygiene, and still less by any frantic appeals to the patriotism of the people.

A cautious self-control, and persistent work for years will be needed, before we can hope to get a proper body capable of coping with this vast subject. Our profession itself, as well as the nation, must grow up to the idea. Simply to aid in this great work, but without a thought that I shall for many years, nor in my lifetime even, see such a Board, I propose the following plan derived almost entirely, in its general details, from one wrought out many years since by that deep thinker, Jeremy Bentham, of England. In the 9th volume of his works, chap. 9, sec. x., under the general heading of "The Constitutional Code," he lays out with great detail all

the different departments of a State government, and he devotes much space to a Health Department.

He would have a Minister of Health, co-ordinate with all the other officers in various departments of state, of law, of war, and of treasury, etc.

Our institutions require that we should have a SECRETARY OF HEALTH, a member of the cabinet, and the peer of all the other secretaries. He should be paid equally with them; and be all powerful, so far as health is concerned, in his own special department, but advisory in his powers when coming in contact with other departments. For example, in connection with the Secretary of the Treasury he should manage so far as health is concerned all hospitals, insane asylums, places of education, forts and camps belonging to the nation. He should have charge of all national medical storehouses, stores and apparatus, and have a right to destroy or otherwise remove all medicines or other things that have become useless. He should have a careful oversight of the water supply of the nation and endeavor to prevent its contamination or loss. He should investigate carefully all malarial districts and see if, by some national plan, land under water or occasionally exposed might not be reclaimed. The bills of mortality of the entire nation should be under his eye, so that he could tell where death was more common, and investigate the special causes of disease and death. He should sanitarily have control of a department of the Census. National pathological and physiological museums should be undertaken by him with *herbaria* of medicinal drugs, and he should establish a medical library. He should endeavor to keep a high standard of professional acquirements, and for that purpose should institute an examination for medical degrees indicating the highest culture; which examination should be made by boards of examiners composed of physicians and surgeons specially selected from every part of the Union, men known by all to be of the highest professional attainments. He should be a man capable of setting other workers into full activity on special investigations which would contribute to the public weal. He should, after studying the relative salubrity of particular regions and learning of their endemic diseases, give information thereof, so that those suffering from various diseases may learn where to go and what places to avoid in order to be comparatively well.

I should hope and believe that after several years of observation and accurate recording of the apparent origin and progress

of epidemics under certain meteorological conditions, he might be able to foretell to a certain State or portion of the country, when and where probably such scourges would attack them, and if any method be known to science whereby such maladies may be avoided or relieved, he would be able and willing to give notice, somewhat as now the Signal Service of the nation gives cautionary signals to our seamen on the Atlantic and Pacific coasts and on the great lakes.

A statesman-like man, able to grasp all these points and many more that might be named, besides a vast number that will inevitably arise every year, and to successfully meet them, should possess no common mind. He would need the strongest and clearest intellect combined with quick perceptive powers. He would need also a power of recognizing the qualities of men, as he will have to bring into harmonious action with himself, for one common benign object, the idiosyncrasies which are so marked in the various parts of our country. Finally, to vivify and co-ordinate all his powers, he should be earnestly in love with the work to which he is specially called, and not have a too anxious care for the funds that are to come to his pocket, from the place he holds. Above all, the Secretary should never be selected as a political hack, and for pay for political services rendered.

Among the duties that would naturally devolve upon such a Secretary of Health are several now connected with the office of the Surgeon-General of the United States Army and Navy. It is certainly desirable that one officer should have the control of all these matters. But as the civil and military and naval departments are guided by separate heads, though subordinate to one chief, I see no reason why the Secretary of Health, while supervising all departments, should not have under-secretaries, among whom would be legitimately the Surgeon-General of the Army and Navy, and the other, one of similar rank in connection with civil life. By this arrangement, there would be no interference with the general plans now adopted in the Surgeon-General's department, and which arrangements are above all praise, reflecting the greatest credit not only on all those upon whom these high duties have devolved, but upon the entire nation, whose grand representatives they are.

But what could one man, even with the most powerful intellect and most self-sacrificing zeal, do without a body of co-laborers and assistants all over the country, and by means of whom he

could communicate instantly not only with any State but any portion of a State? And this brings us to a second part of the plan which I propose for your discussion, and which seems demanded by the very nature of our government, which consists of separate, independent States, united under a common head, with limited powers. It is plain that the Health Secretary will need the assistance of a body of representative men coming from every State in this Union; or, in other words,

A HEALTH COUNCIL CHOSEN BY INDIVIDUAL STATES.

I have thought much upon the best method of gathering such a Council, and would submit the following as, perhaps, a feasible one. Two of my colleagues of this Section suggest a similar arrangement:—

1st. Each State should be represented by one man.

2d. Such representative should be selected by those supposed to be best qualified for the task, viz., either by the State Medical Society or, what I should prefer, the State Board of Health. Any citizen of the Commonwealth, either a physician or layman, might be selected, provided he be an eminent representative of sanitary science, or some other branch of human learning that would aid a Nation's Health Council. Such a person, when nominated, should not be a Councillor until accepted by the Governor of the State; and, after receiving the proper credentials as such from the Executive. I am greatly encouraged to submit this plan because, even while writing it for publication to you, I received a letter from my colleague, Dr. Nottingham, of Georgia, informing me that Georgia has just established a Board of Health, and submitting to me his views, which are virtually my own, in reference to a National Council. I hail with delight this proof of renewed fraternal sympathy, mutual labor, and support between Georgia and Massachusetts. If every State should have a Councillor, and all should be present at any meeting, the body would be always sufficiently small for purposes of debate. Some of them at least would be able men. Each Councillor should hold office for five years, and could be re-elected. In addition to these State Councillors I would suggest that this Association should select, every five years, four men as Councillors at large from the nation. They should represent, so far as is possible, four great divisions of the country. Each man should serve for five years, provided that, if

for any reason a vacancy should occur, the American Medical Association, at its annual meeting, should choose another to fill out the unexpired term.

Finally, the National Government should be represented in the Council by the Health Secretary, the Surgeon-General of the Army and Navy, and Chief Signal Officer. It would be important to have all of these officers connected with the Council, and with seats provided for them at the meeting, so that they might be able to answer questions, etc., submitted to them by the Council.

This plan apparently takes from this Association a portion of the power which some members claim as its right—to nominate the entire National Council. But I reply that, 1st, by this plan the Association still stands higher than any single State in having four representatives.

2d. It seems to me that all reasonable persons must admit that a delegate from each State, and chosen by the representatives of the State, would enable the body of Councillors more properly to represent the various sections of the country, and, moreover, be more in accordance with our institutions than its opposite, which would put all into the hands of any one central power, which fact, in politics at least, we all justly dread.

The fact of the constant change of place of meeting of the American Medical Association must necessarily compel it at all its meetings to be more or less sectional in its action, however much it may claim and may really desire to be a national body. At its general meetings it has never represented, and it never can fitly represent, every part of the Union. The most distant portions cannot induce delegates to attend, whereas those parts nearest to the place of meeting send their full complement of delegates.

FUNCTIONS OF THE COUNCIL.

It should have advisory powers simply. It should meet every year, and after selecting its Chairman should inform the Health Secretary that it is ready to receive communications from him. That officer would thereafter have a seat at the meeting, and he would lay before it a document upon the whole subject of the National Health, its actual condition, whether any parts of the country are particularly liable to disease, or, if it has suffered from any severe trials from the prevalence of disease, the facts should be given. Past work should be touched upon, and proposals for

future labors brought forward. In truth, any and all things tending to prevent the Nation's ill-health or to promote its good health, should be considered legitimate objects for discussion in such a paper. Above all, I should hope that annually the Secretary would propose to the members certain definite, compact, and easily answered questions for investigation, to be carried out in their respective States. These at times might, apparently, be of little value and should be so prepared as to cause as little trouble as possible to each Councillor. Nevertheless, if honestly and faithfully pursued and answered over the whole nation, these questions might be of invaluable service not only to this country but possibly to the entire world, because the observations would relate to so large a space of the world's surface.

The first subject for discussion by the Council should be this communication from the Secretary. Its separate parts might be referred to special committees, subsequently to be reported upon. Other subjects for discussion might be brought up in the Council, and the Council should have the power to direct the Secretary to carry on any investigations it might deem proper.

TIME, PLACE, AND DURATION OF MEETINGS.

The first week in January seems a time not inappropriate, and the place, Washington, D.C., whilst it continues the seat of Government. I would limit the session from the first Tuesday until Friday inclusive of that week.

Such are the general outlines of a plan which seems feasible, if we will only persistently keep the subject of Public Hygiene before the people of the different States, and at a *future* time appeal to the National Government.

EXPENSES OF THE COUNCIL.

Upon this point it will be well for this Association to take the highest ground. No reasonable amount of money paid out of the national exchequer would be misspent upon such a Council when it comes fairly into operation; therefore we should demand of Congress—

1st. A Secretary of Health with a salary equal to that given to any of the Secretaries connected with the Cabinet.

2d. A Council to meet annually, as above suggested, or other-

wise as may hereafter be thought best, each member of which should be paid mileage and travelling expenses, and a *per diem* allowance during the actual session at the Capital equal to what is now or may be hereafter paid to members of Congress. I deem this payment just: 1st. Because it is right that men should be paid for labor performed and time spent in the Nation's service; and 2d. Because by no other means can we hope to have really a National Council.

The roll should be called at each session, and any one absent without valid excuse should forfeit his *per diem* salary.

WHAT CAN THIS ASSOCIATION DO NOW, AND IN THE FUTURE, TOWARDS CREATING SUCH A PUBLIC OPINION THAT THIS OR SOME OTHER NATIONAL HEALTH COUNCIL MUST BE EVENTUALLY ESTABLISHED?

This Association should immediately inaugurate a system of measures tending to two objects, both of which, according to our previous course of argument, are necessary before such a council can be established.

1st. By publication of our object in all the States of this Union, we should endeavor to educate public opinion to the point necessary for its establishment, but from which point we are far enough, save in particular States, at the present time.

2d. I hope that this Association will direct its President and the Permanent Secretary, annually, in the name of this Association, to urge the importance of State Boards of Health upon the consideration of the Legislatures of every State where no such Boards have been by law established. A direct appeal should be made to the Governor of such State requesting, if he should deem such a course consistent with his public duty, to lay the subject before the Legislature of his State.

3d. I trust that the Association will direct the Secretary, annually, to report the names of those States which have no State Boards of Health. When the whole number of the States or a great majority of them have established such Boards, then, and not till then, this Association should begin to act upon Congress by petition and otherwise looking towards the appointment of a Secretary of Health. It may be a question, whether we should endeavor to get a Council at the same time, or wait until the necessity for such a Board should become so absolutely evident that its creation would

be an easy matter. Without a public opinion, better than we have at present in the different States, sustaining such a Council, the attempt to establish it, as I have already stated, would be vain.

In order to bring these questions fully before the Association, I append two resolutions which I would earnestly urge you to adopt.

Resolved, That each year, until otherwise ordered, the President elect and the Permanent Secretary be directed to appeal in the name of this Association to the authorities of each State where no State Board of Health exists, urging them to establish such a Board.

Resolved, That the Permanent Secretary is hereby directed to report annually the names of the States where Boards exist, and also of those which decline to establish them; said report to form part of the annual proceedings of the Association.

APPENDIX A.

NAMES OF CORRESPONDENTS.

Letters have been received from the following members of the Section, and to them the Chairman desires to express his sincere thanks for the assistance they have afforded him in the preparation of the preceding report.

Drs. Baker of Michigan, Bell of New York, Caball of Virginia, Catlin of Connecticut, Field of Iowa, Fitch of Maine, Frissell of West Virginia, Howard of Maryland, Hunt of New Jersey, Irwin of Ohio, Jackson of Kentucky, Dean of Missouri, Kinlock of South Carolina, Linthicum of Arkansas, Logan of California, Nottingham of Georgia, Parsons of New Hampshire, Peabody of Nebraska, Pollock of Pennsylvania, Smythe of Mississippi, Snow of Rhode Island, Strong of Wisconsin, Stuart of Minnesota, Wallace (aided by Drs. Lewis and East) of Texas, Woodward of Vermont.

APPENDIX B.

SANITARY LEGISLATION IN MASSACHUSETTS FOR THE LAST QUARTER OF A CENTURY, AND SOME OF THE OPERATIONS OF THE STATE BOARD OF HEALTH.

The history of the efforts and final success in establishing a State Board of Health in Massachusetts, I present as an evidence of the difficulties and ultimate success that will probably be met with in other States.

Twenty-five years ago, a report of the "Sanitary Commission" of Massachusetts was published by State authority. It was chiefly written by a layman, Lemuel Shattuck, Esq., a most eminent sanitarian of that day. It is an admirable and exhaustive examination of what the State had done in the past. It gave detailed plans and suggestions as to what it was incumbent on the State still further to do. Many of its pages will apply to any State at the present day. Among other recommendations it suggested the appointment of a State Board of Health. It demanded that Board on similar grounds to those taken when establishing a State Board of Education, viz., the public weal. As I read it now after the lapse of a quarter of a century since it was written and presented to the Legislature, I wonder at the wisdom of its suggestions and learn much from them. I wonder also at the fatuity of repeated legislatures who, year after year, steadily refused to listen to petitions from the Massachusetts Medical Society and others for the establishment of a State Board of Health. The recommendations of the commission as to the constitution of such a Board are excellent, viz., that it should contain "two physicians; one counsellor at law; one chemist or natural philosopher; one civil engineer, and two persons of other professions or occupation"—*i. e.* seven persons—two of them only being physicians, should constitute it.

The present Massachusetts Board of Health, established June 21st, 1869, consists of three physicians; one counsellor at law; one civil engineer; one wholesale leather dealer; one literary writer; all of them are practical, active, business men. That is, after nineteen years of struggle to get the Board and under many refusals of the Legislature, we gained our end and have a Board the majority of whom are laymen.

But our practical experience of the working of such a combination of material convinces us that our lay majority tends *only* to good. It makes the Board broader in its views. It prevents too great a technical and professional bias; and often brings up sanitary measures of great value to the community. Of course, on all matters essentially medical, great deference is paid and always will be paid to the opinions of Physicians of the Board.

Another recommendation of that Commission is, that a secretary should be appointed who should devote his whole time to the object, and be suitably paid for it. This too has been followed out, and although the law does not absolutely forbid the secretary from engaging in practice, it is virtually so, because the frequent calls at his office and the necessity for journeying to inspect the sanitary condition of various towns, etc. prevent any really extensive professional practice. He has a salary of $2500. Others of the Board are not paid, save actual expenses while on office business.

Since its establishment, the Legislature has annually allowed us five thousand dollars for necessary expenses, in addition to the Secretary's salary. We have rarely spent to that amount. I was recently conversing, in relation to this appropriation, with the Democratic leader of the house, and by whose active energy the Board was finally brought into existence. He expressed the opinion that the improvement in the health of the operatives in a large manufacturing establishment in his vicinity, resulting from sanitary regulations offered in one of the papers by Dr. Derby, our late Secretary, had more than repaid, even in his portion of the State, for all the appropriations hitherto made in support of the Board.

Immediately after our appointment on the Board, we sent out circulars to most of the Town Boards of Health or to the Selectmen asking them to nominate some physician of each town as our correspondent. This put us into very agreeable relations with the local Boards, which have been retained ever since. When one of these correspondents dies or leaves the town, we now usually choose for ourselves a man whom we know to be *reliable* to take the vacant place. The position of correspondent of the Board is by some considered an honor. By no one has it been refused. Of course there are great differences among them. To have obtained all equally able and willing correspondents is perhaps more than could be expected of any unpaid corps of assistants in any department of civil life. From these correspondents we, at times, ask special investigations of local nuisances, and then we pay them for

their extra services. We learn from them much in regard to the "health of towns."

Recently, at the suggestion and under the direction of Dr. F. W. Draper, as "Registrar," the State has been districted and weekly reports of prevalent diseases have been published in the medical and daily journals, in connection with the mortality reports. These may possibly be eventually with advantage compared with the daily reports of the Signal Officers of the Massachusetts stations.

I mention these facts not as presenting anything of importance as actually done, but to indicate the general direction in which our labors have chiefly been hitherto; and in the hope that to other minds some of these methods may seem appropriate for other States. Still more do I hope that they may suggest better and more comprehensive plans which can be worked out elsewhere and also in Massachusetts. Moreover, it has seemed to me to be well to give the statement of the many years of application, and of frequent refusals by the Legislature to attend to our petitions, and of our final success, in order to warn and encourage all workers in States where no Boards now exist. If new Boards are ever to be formed therein, the advocates must make up their minds for one or two and perhaps more rebuffs. No notice must be taken of this opposition, but let petitioners go to the Legislature annually or at least every few years persistently until the end shall be obtained. There can be no doubt of that success, because, hereafter, governments will have to see to the health of the people as much as it does now to its education.

Another and final reason for these details is the hope that they will induce my professional associates throughout the Union to endeavor to get an infusion of the laity into their future Boards, for I am sure from our experience that only pleasant and profitable results will follow from that co-operation.

STATE MEDICINE AND PUBLIC HYGIENE.

CIRCULAR LETTER FROM HENRY I. BOWDITCH, M.D.,
CHAIRMAN OF THE SECTION.

BOSTON, MASS., 113 Boylston St., Oct. 22, 1874.

DEAR SIR: At the last meeting of the American Medical Association you were chosen a member of the Section on State Medicine and Public Hygiene. As Chairman, I propose the following subject for our Report in 1875: "A Health Council for the Nation." I would like to have your views upon the subject, and also answers to the following questions on State Action in regard to the establishment of State Boards of Health.

1st. What should be the character and objects of a National Health Council?

2d. When should it go into operation?

3d. Has your State established a State Board of Health?

4th. If so—how is it constituted?

5th. Is it composed solely of physicians, or physicians and laity?

6th. Have any ineffectual efforts been made to establish such a Board?

7th. What are the prospects of such a Board being established by the Legislature?

Please answer on or before Jan. 1, 1875.

Faithfully yours,

HENRY I. BOWDITCH.

Extracts from Letters from Members of the Section, in reply to the foregoing Circular from the Chairman of the Section.

From THOMAS M. LOGAN, M.D., Secretary of the Board of Health of California, and member of the Section for that State.

SACRAMENTO, Dec. 13, 1874.

HENRY I. BOWDITCH, M.D., *Chairman, etc.*,

DEAR SIR: * * * *

A National Health Council should hold the same relation to the country medically, that the central Government does politically. It should be a representative body, and need not be large. It might consist of one representative from the New England or Northern States, one from the Southern, one from the Middle or Western, and one from the Pacific States. These representatives may be chosen by the American Medical Association, for the term of four years, subject to the approval of the President and Congress. They should, just like the Bureau of Agriculture, constitute a sanitary Bureau, and organize by electing a Chief, to reside at the national capital; where the members should meet once a year or oftener, to discuss and devise measures for the preservation and improvement of the sanitary condition of the whole country, and secure the passage of general laws to give co-efficiency to the various State Boards of Health;—in respect to quarantine regulations, by land as well as by sea, to promote concert of action internationally, to establish a nomenclature of diseases, to provide for a uniform registration of births, marriages, and deaths, to have charge of that portion of the United States Census which relates to Medical Statistics, and publish annually, instead of decennially, the results of their labors.

Like the War Department, which makes constant synopses of the weather, storm currents, etc., the "Signal Service" may be so extended and utilized by the Health Department as to have reports of sicknesses and deaths, for corresponding periods, regularly sent to the central office, where they may be analyzed and notices of danger served, when discovered. The same system may be extended from our country to Europe, and the two continents made to exchange their daily records of disease and weather reciprocally.

These and many other objects, which will naturally suggest themselves to your mind, should appertain to the office of a National Health Council.

Of course all depends upon the passage of a carefully drawn up enactment, by Congress, and an appropriation sufficient to command the best talent in the land.

I have suggested that the selection of the members should be made by the American Medical Association, because physicians

are best able to judge of their fitness, and the appointments should be kept out of the hands of politicians. This will make our Association a power in the land, and elevate the status of the profession to a level with that of the highest tribunal.

* * * *

Very respectfully,
THOMAS M. LOGAN.

SACRAMENTO, April 9, 1875.

* * * *

I was pleased to perceive, by yours of the 15th ult., that you propose reporting favorably respecting a "National Health Council." I *now* think you are right that it should be entirely independent of the American Medical Association, and that it should constitute a department of the General Government.

* * * *

Yours truly,
THOMAS M. LOGAN.

From B. H. CATLIN, M.D., member of the Section of State Medicine and Public Hygiene for Connecticut.

WEST MERIDEN, Feb. 3, 1875.

* * * *

"1st. What should be the character and objects of a National Health Council?"

Ans. It should be composed of some of the best men of the nation, those who have paid special attention to State Medicine and Hygiene. A large majority of the Board should be physicians, the remainder lawyers and philanthropists.

The first object should be the collection of all facts possible relating to preventive medicine, especially all causes of disease which may be removed or obviated. All to be arranged and classified as far as possible.

* * * *

I think the subject of preventive medicine or the prevention of disease is one of the most important of our times, and should be pursued with the utmost diligence. One important means for accomplishing the desired result is a National Council where facts and discoveries may be collected from all parts of our extended country, and published under authority.

* * * *

Yours truly,
B. H. CATLIN.

From L. W. BUSH, M.D., member of the Section for Delaware.

WILMINGTON, DEL., April 27, 1875.

* * * *

I conceive the subject on which you propose to report of great consequence to our country, and to the cause of medical science.

* * * *

Our State has not yet established a State Board of Health; nor have any efforts been made to establish such a Board.

* * * *

Very respectfully,
L. W. BUSH.

From C. B. NOTTINGHAM, M.D., member of the Section for Georgia.

MACON, March 2, 1875.

* * * *

1st. I most heartily approve of the policy of organizing a National Health Council, and believe it should be a separate and independent establishment free from all embarrassing political conditions and not subordinate or secondary to any other Bureau or Department of the Government. It should be composed of a Chief, a medical man, to be nominated by the President of the country and confirmed by the Senate, whose residence and office should be at the national capital, of a representative member of the Medical Corps of the Army, from the Medical Corps of the Navy, and from each of the State Boards of Health, all of whom should assemble in council at the City of Washington at least once a year, and continue in session until the business bringing them together shall have been disposed of. The paramount object of the organization and of the annual meetings should be the promotion of sanitary science by the examination, generalization, and elaboration of all the facts pertaining to vital statistics, hygienic laws, and the public health that are presented in reports or records of the State Boards of Health or in information obtained from other sources, and the dissemination of these facts by suitable publications to be distributed over the country and to the scientific world.

2d. As such a Council would, I apprehend, be dependent, in a great measure, for the material from which its usefulness would result, on the State Boards of Health, which would be its most constant, uniform, and reliable tributaries and feeders, its organization should be deferred until active and efficient Boards shall have been established in most of the States. Eight of the States, I

believe, already have created these Boards, and as a deep feeling of interest in what we term preventive medicine has been very generally awakened in the profession and to a considerable extent among the people and legislators throughout the country, the hope I think may be reasonably indulged that a sufficient number will in a few years wheel into line to warrant the National Association in memorializing Congress on the subject of creating a Central Council for the nation; as an independent Department, calculated to subserve the interests of science, to improve and better the condition of the population, and to reflect lasting honor on the nation. Any effort in that direction, if made at this time, should be made simply with the view of stimulating the formation of State Boards, and any act of Congress establishing a Council should at least provide against any meeting until a majority of the States shall have organized such Boards as will annually send up valuable and instructive records. A Bureau subordinate to or connected with any other department of the government would be inadequate to the wants of the age, the requirements of the people, and unworthy the ambition of the great American Medical Profession. Such an organization probably would accomplish but little, if anything, more than is being already effected by the enlightened efforts of the Surgeon-General and the Department of the Interior, under the restrictions and with the limited means at their command.

3d. Georgia has established a "State Board of Health." The fight was a hard one, but the friends of progress, enlightenment, and science ultimately triumphed at the recent session of the Legislature and secured the passage of a good bill creating a Board.

4th and 5th. Our Board is composed of eight physicians, one from each congressional district, to be appointed by the Governor, and of three laymen—State officials—the Surveyor General, the Comptroller General, and the State Geologist.

* * * *

Fraternally yours,
C. B. NOTTINGHAM, M.D.

From A. G. FIELD, M. D., member of the Section for Iowa.

DES MOINES, April 12, 1875.

* * * *

"1st. What should be the character and object of a national health council?"

Its chief officer should be appointed by the President of the United States, to serve for a term of not less than four years.

There should be at least one member from each State, chosen by the respective State Boards of Health, to serve for terms of not less than two years each. While as a rule it is believed that members of the medical profession would be most efficient, there should not be an arbitrary exclusion from membership, of scientists, philanthropists, or statesmen, of whatever avocation. Its meetings should occur as often as once a year, and at such time and place as shall afford the best opportunities for observations and practical results.

Its object should be to advise and assist each State Board in perfecting means and plans for the most efficient work, in the peculiar line devolving upon each, in behalf of the greatest public good. It should also develop, collect, generalize, and diffuse knowledge relating to medicine, and its collateral sciences. But its province should be more especially the elucidation of questions not within easy reach of individual effort, such as those relating to medical topography, statistics of mortality, and hereditary transmissions; as well as the ultimate constitution of miasms, contagions, and infections, the laws which regulate their development and operation, and kindred topics. To these ends it should be amply authorized and provided.

"2d. When should it go into operation?"

As soon as practicable.

"3d. Has Iowa established a State Board of Health?"

None.

"6th. Have any ineffectual efforts been made to establish such a Board?"

None.

"7th. What are the prospects of such a Board being established by the Legislature?"

It is impossible to state until the subject has been presented.

Respectfully,

A. G. FIELD.

From E. L. HOWARD, M.D., member of the section for Maryland.

BALTIMORE, December 26, 1874.

* * * *

"1st. What should be the character and object of a National Health Council?" The question presents itself to my mind in a two-fold relation: *first*, as purely a matter of scientific and professional

interest; *secondly*, as viewed in its *political* bearings and relations. If such a Board could be established and maintained free from the contaminating influence of party politics, I have but little doubt of its beneficial results. But that its members would, in all probability, be appointed from political consideration, and as a reward for partisan assistance, rather than from merit and scientific attainments, I entertain strong fears!

* * * *

It would unquestionably be a great gain if our coast quarantine could be brought under some central national head and reduced to a more uniform system. But while this improvement would be effected in our quarantine, I think I see in it a source of great danger to the efficiency and integrity of the *Board* itself. I do not see how it would be possible to clothe the Board with administrative or executive powers, without great liability to dangerous abuses! Whatever might be the *ultimate* character of a National Sanitary Bureau, I am quite clear that, *at the outset*, it should be strictly prohibited the exercise of any executive functions. Its duties should be entirely those of an *advisory* nature. Let it gather and disseminate information, and let only the *municipal* and possibly the State Boards be clothed with power to act as at present. The difficulty might be solved by having the coast quarantine brought under one national head, in the same manner as the medical departments of the army and navy are now managed. The chief of this new department, together with the Surgeon General U.S.A., the Chief of Bureau of Medicine and Surgery U.S.N., and the *Chief Signal Officer* U.S.A., should be *ex-officio* members of the "National Health Council." The other members of the "Council" (to be nominated if practicable by the American Medical Association, the Surgeon General U.S.A., and Chief of Medical Bureau U.S.N., or some other competent medical authority) should be appointed to serve for a long term of years, and they should be well remunerated.

The duties of the Council, so constituted, would largely consist in gathering information from the coast quarantine, from the medical officers of the army and navy, from all signal stations, and also from State and municipal health boards;—or, in other words, each quarantine station; each army post; each naval vessel,—off the coast, or in port, each weather signal station; and the various State and municipal health boards, would constitute a reliable

source of monthly or quarterly reports exhibiting meteorological and sanitary conditions and changes, from one end of the country to the other, with but slight cost to the government. In possession of these vast sources of information, and restricted to simply advisory functions, such a Council could accomplish a large and most beneficial work in the practical assistance it could render State and local authorities, and in the accumulation and classification of statistical knowledge. Of course many minor points will suggest themselves; the Council, for instance, should have authority to employ competent parties to make special investigations wherever such may be deemed advisable.

Such, in brief, are the opinions I have arrived at regarding the most feasible plan for the organization of a National Health Council. If started on this basis, doubtless important improvements and amplifications will suggest themselves for adoption.

I have submitted my views in obedience to your request, but with great diffidence.

"2d. When should it go into operation?" In answer to this query I submit that a Council, such as I have described, might at once be put into operation, to be improved upon from time to time as occasion may dictate.

* * * *

Your obedient servant,

E. LLOYD HOWARD, M.D.,
Secretary State Board of Health of Maryland.

From HENRY B. BAKER, M.D., Secretary of the State Board of Health, and member of the Section for Michigan.

LANSING, Jan. 1, 1875.

* * * *

It is well known that a "National Health Council," a "National Health Department," "Bureau," or "Proper Central Sanitary Organization" at Washington has been proposed and recommended by various National and State Societies and Associations. A "National Board of Health" has been proposed, and the necessity for a "National Quarantine Board" has also been urged. These numerous though not very dissimilar expressions indicate that in the minds of those who have given this matter the greatest degree of thought, there is a general belief that it is the duty of the National Government to inaugurate and maintain some organized

effort for the better protection of life and health, but the precise character of the action which it is desirable to begin with is a matter concerning which there are, not very different opinions, but slightly different impressions. Under these circumstances, the first question propounded by the Chairman of this Section on Public Health in the American Medical Association, is a very proper one, as tending to render more definite, and therefore more effective, the general belief that Government should act. The question presupposes a belief that *some* action should be taken, and asks what shall be its character and what the object.

The character of an organization may and should be indicated by its name. I propose a "Public Health Commission" for the United States—the U.S. Public Health Commission. And this Commission should be a permanent Commission of *Inquiry*.

In undertaking any new project, the prevailing and dominant idea should be the accumulation of knowledge concerning that undertaking. This principle seems to be so evidently correct that I will not argue it, but only illustrate it by referring to the fact that it is acted upon by all who first learn before practising a trade, an art, or a profession, and by all who keep up with their business. As, in this case, we should continue to learn, the Commission should be permanent. Now it is granted that the medical profession is already in possession of a large amount of knowledge on the subject of Public Health, and that if this knowledge could be immediately acted upon, it would result in the prevention of thousands of deaths in these United States, in every year, and that millions of dollars in money might be saved annually to the people of this nation through the prevention of sickness and deaths. If this result could be obtained, as we firmly believe it could, through such action as might be inaugurated and maintained by the leading sanitarians of this country if they were legally constituted a National Board of Health, who will undertake to say that this should not be attempted immediately?

But it may be said that this knowledge cannot be immediately acted upon. The Government of these United States is vested in Congress, and Congress is composed not of physicians or sanitarians, but of representatives of all classes of the people, except, perhaps, sanitarians. Whatever action is taken must be by Congress, either directly or indirectly through its appointed agents, or through some of the executive officers now provided. On first thought, it may appear to some persons that all that can be done

in the way of preventing disease and death by the employment of our present sanitary knowledge is already provided for, through the local boards of health which now exist in almost every large city. But though adequate quarantine may keep cholera from entering New York City from the sea, yet, under present circumstances, cholera may begin at New Orleans and be allowed to visit Memphis, Louisville, Cincinnati, and one city after another, until it may even enter New York City or Boston from the rear. In some parts of the United States, yellow fever is promptly dealt with, and its spread prevented; but we have lately seen that in certain other parts it is allowed to go from one city and State to another, and sweep off hundreds of our citizens. Only a few of the States have State Boards of Health, and in the event of any great and wide-spread epidemic this whole country is almost entirely unprotected. Except the imperfectly planned local boards of health, there is absolutely no legal provision for even the slightest governmental protection. There are railroad trains which on every day pass through several States. No State laws are adequate to the protection of the people from the spread of contagious and infectious diseases. A railroad train may scatter smallpox from one side of the country to the other and throughout its whole length and breadth; and there appears to be no national provision for the prevention of this.

It is easy to mention other important facts which prove that all is not done that can be done in the way of carrying into practical effect the great mass of sanitary knowledge now possessed by the sanitarians of this country. It may be said that the men who now constitute our National Congress have not yet that thorough knowledge of sanitary science which will warrant them in employing such measures for the prevention of disease and death as the people themselves or local boards of health and local quarantine authorities are incapable of originating or unable to employ.

But it *is* fair to assume that our members of Congress have sufficient general intelligence and knowledge of what is being done by the numerous and active American Associations, which have for their object the advancement of the various sciences which bear upon the well-being of society, to understand fully that this knowledge only awaits their asking. For the past few years the Transactions of the Medical, Public Health, and Social Science Associations of this country and of foreign countries have contained abundant evidence from our best thinkers in these special fields, that "the

people die from lack of knowledge" of the facts and principles of public hygiene, and from want of the practical application of those principles of sanitary science which are so familiar to the members of this Association. Not only members of Congress and leading men have had opportunity to learn this, but the masses of the people have for some time been eager to hear and read on this subject. As evidence of this, it may be mentioned that one of the leading newspapers of this country—the *New York Times*—gave over a page of each day to the publication of the proceedings of the American Public Health Association, which met in Philadelphia in November last. In closing one editorial on the subject, that paper said:—

" We know of no reading likely to prove of such vital interest at the present time, as the valuable series of papers which we have taken pains to reproduce so fully from the proceedings at Philadelphia. They are a reflex of the experience of physicians and sanitary engineers of national reputation, and if we cannot go to the length of Mr. Disraeli, in stating that sanitary reform is the great question for the statesmanship of our day, we may at least safely insist that it is time the public were more fully educated in its requirements."

If we admit (as many will not) that Congress has not yet sufficient knowledge of such subjects to make it for the best interests of this country that it provide a National System of Quarantine and organize a National Board of Health with power to enforce its convictions, it seems to me that no right-minded sane person living in this enlightened day will undertake to say that Congress should not take immediate steps for continuously obtaining such knowledge as will enable it to do all that men and governments are capable of doing in the way of preventing unnecessary sickness and deaths among the people who really constitute this government.

Surely it needs no argument to prove that the very highest function of a government is the protection of the lives of its people; for the highest interest of each individual citizen is in his own life, and in the life of those dear to him. No question of finance, of taxation, of class monopolies, of civil rights, or even of personal liberty, can for a moment compare with the question of life, or even with the question of health, for without health there can be no great degree of happiness.

I conclude then that " the character of a National Health Coun-

cil" should be such as would be indicated by the name, which I suggest should be "The United States Public Health Commission." The object of this commission should be to gather, from all possible sources, information bearing upon the subject of the life and health of the people, and to devise plans for the better protection of the lives and health of the people of these United States; and to report annually, and when called upon, to Congress, such facts, statistics, and recommendations as, after thorough study and due deliberation, the commission may deem important to be placed before the people or their representatives in Congress, to the end that such action be taken as that, of the many thousands of deaths which now occur in the United States in every year from preventable causes, some may be prevented, that some part of the unnecessary suffering and pain through the thousands of cases of preventable disease which now occur may be avoided, and that millions of dollars in money, now used through such causes, may be saved to the people, who also through lessened disabilities would be capable of contributing, to the general wealth of the country, millions of dollars annually in addition to those directly saved through lessening sickness and deaths.

It seems to be generally admitted by statisticians that in the United States, the birth-rate is decreasing. If we are to maintain ourselves as do other nations, we must make up for this by lessening the death-rate. The life of this and of every nation depends upon the life and vigor of the individual citizens of which it is constituted. *As for the individual man, one of the primary laws of nature is self-preservation, so also one of the first duties of the State is the protection of the lives and health of the people.*

When this government was founded, this principle was as clearly recognized as it could be at that time, before sanitary science had reached its present advanced position, where it can declare, positively, that thousands of deaths can and ought to be prevented, that man is his brother's keeper, that sickness and death cannot afflict any number of our citizens without seriously affecting *all* classes of our people, that the people need protection from unintentional even more than from intentional destruction of life. At that time, man was believed to be in the greatest danger from his fellow men, and the declaration was that this government was inaugurated for the purpose of securing to its citizens, "life, liberty, and the pursuit of happiness."

Now we know that more deaths result from preventable causes

than from murder and from war; and the application of that same principle which was first declared to be the chief function of the government, would, in a great degree, prevent the enormous waste of human life which individual citizens are now powerless to avoid or prevent. We ought to profit by the teachings of the wisest of our race, but in this matter of public health, the most ignorant and degraded can so engender disease that all, from the lowest to the highest, shall be swept down by the epidemic, and either perish outright or remain to drag out a miserable existence.

We want such a change in governmental methods, or rather in the objects of governmental action, that this most important of all functions of government, the principle of which has really been recognized from the Declaration of Independence, shall receive the attention which its importance demands. I do not now ask that any new organization shall undertake the government of the people in this particular; I would not relieve Congress of that responsibility. I have not even asked that in the selection of men to represent us in Congress, more thought should be given to the subject of the preservation of our lives, although I think the people might better elect sanitarians than some whom they do elect. But I do insist that we have a right to demand, and to expect, that Congress shall do as much for the public health as it has already done for the public education. There is a Bureau of Education. We have a right to demand for *this matter of life, which is of interest to the whole people*, at least as much as has been done for a *class of people*, the Agriculturists, who have their "Department of Agriculture." In my opinion nothing short of a "Public Health Commission," composed of the leading sanitarians of this country, will satisfy the demands of the people at this time.

As knowledge should be the basis of all human power and government, I would have this Commission charged with the duty of collecting information concerning the public health. I would have the chief executive officer of that Board keep a central office at Washington. Inasmuch as the leading sanitarians probably best know who among them is best qualified to be their executive officer, I would have that officer chosen by the Commission, either from their own number or otherwise as they should determine. It should be the duty of that officer to compile the statistical and other information which the Commission should collect. He should have charge of the correspondence, should receive weekly reports of mortality from all the principal cities in the Union, and should

be able at any and all times to report the vital condition of the people, the prevalence or absence of diseases which endanger the public health. It would soon become his duty to do more than this, and to warn the people of prospective danger at any point where danger threatened, either through epidemics or endemics, of contagious or infectious diseases, or such meteorological conditions as extreme heat, moisture, dryness, etc., and the warning should include suggestions which would enable those so disposed to best avoid the particular cause of sickness or death. Only in some such way as this can it be made easier for the most intelligent of our race to avoid or survive those scourges which now sweep off all who come within the infected districts, or to whom contagion is brought.

The members of the Commission might be appointed by the President and confirmed by the Senate. In the selection of members, the President should receive the aid of the leading National or State Associations of sanitarians or physicians, so far as that a number of persons should be nominated by such bodies from which the President might select if he chose.

In answer to the first question of our Chairman, then, I have endeavored to give some of the reasons why I think that the character of the national sanitary organization of this country should be a "Public Health Commission;" that it should be made its duty to collect, collate, and present to Congress all useful information relative to public health; that because of its duties, it should be composed of the leading sanitarians of this country; that it should meet quarterly, or oftener if unusual circumstances should demand it; that it should have an executive officer at Washington all the time; that this officer should act as a Registrar of Vital Statistics and perform other duties, some of which I have endeavored to indicate. In answer to the second question, I would say that, in my opinion, some such national organization should have gone into operation years ago. Some of us have been laboring for this object for several years, and many of the leaders have long complained of the apathy and conservatism which thus far prevented this most important movement in the interest of the people. I am ashamed to say it, but it is true, that some of this indifference and even active opposition, has been found in our own liberal-minded and philanthropical profession, which has usually been foremost in movements for ameliorating the condition of mankind.

To answer the second question briefly, this Commission should begin their operations immediately. It cannot be appointed or begin its labors too soon.

Very respectfully,

HENRY B. BAKER,
Member of the Section for Michigan.

From A. B. STUART, M.D., member of the section for Minnesota.

WINONA, Dec. 28, 1875.

* * * *

1st. It should be composed of duly chosen representatives of the several State and City Boards of Health of the United States, and any others whose duties and qualifications for such work may recommend them to the Council as corresponding members. Those who become members by virtue of representing either State or City Boards cease to be active members when not chosen as delegates. The Council should be the outgrowth of these lower organizations.

The object of a National Health Council should be, in brief, to bring the knowledge and experience of each Board into the possession of the whole, and to systematize and harmonize the great work of public hygiene.

2d. Its character and object being as above stated, it might go into operation at any time, six States, including Louisiana, having organized State Boards of Health in addition to the several city Boards.

Instead of waiting, as has been suggested, for a majority of the States to organize State Boards of Health, before an effort is made to frame a National Health Council, or an Association, let the latter be established immediately, and educate the States in the direction of the former.

* * * *

Yours, most respectfully,

A. B. STUART.

From D. V. DEAN, M.D., member of the Section for Missouri.

ST. LOUIS, April 23, 1875.

* * * *

Missouri has not made any attempt to establish a State Board of Health, and if perfect silence on the subject is any index, I

should say there is no immediate prospect of such a Board being established by the Legislature.

* * * * *

If State Boards of Health should not wait for town, county, or city Boards, I do not see why a National Board should be deferred until after the formation of State Boards. The desire of States to be represented in the National Board, would be an incentive to the organization of the former Boards; and the orders, suggestions, and general information on sanitary matters, emanating and going out from a National Board officered by, and composed of learned and efficient sanitarians, would, I think, lead far toward greater harmony and intelligence of action in State, county, and city Boards. When smaller and larger districts shall find their labors are not to be annulled or rendered practically inefficient by conflicting regulations, or by utter lack of regulations, in the country around them, when their proposed health ordinances or laws shall not be cumbered with unwise restrictions, or be clipped and shorn of all valuable features before they are passed; and when boards of health shall be composed of sanitarians holding their positions by a reasonably permanent tenure; and not of politicians utterly ignorant of the practical advances or even the general principals of sanitation; then will there be some encouragement for smaller or local Health Boards.

National Health Boards can, through home and international agencies, gather statistics and disseminate knowledge. Such a Board would extend its influence to, as well as draw from, the very corners of our country; and it might bring to pass that valuable and well-tried sanitary rules and regulations could be broached in local Boards without being ignored or treated and put down as new-fangled nonsense. Then there would be more of systematic, salutary action in health matters, and less of the impractical inventions of raw untrained Health Boards to meet ever recurring emergencies.

* * * *

Yours, very truly,

D. V. DEAN.

From J. W. PARSONS, M.D., member of the Section for New Hampshire.

PORTSMOUTH, Dec. 16, 1874.

* * * *

My idea is that there should be a National Health Bureau, the objects of which should be the collection and investigation of facts

and theories concerning the sanitary condition of the country. It should be in close relation with all health associations whether State or town; should have some voice in matters of quarantine. It should take cognizance of and investigate extensive epidemics, their causes and prevention. It should be a repository for all vital and death statistics, etc. etc.

With this Bureau might be associated a council composed of one member from each State which has a State Board of Health, whose duty it should be to report and advise upon all sanitary matters. If a distinct Bureau could not be created for health (and physicians well know that health is the last thing the people legislate for), then let it be attached to one of the civil departments.

Whatever shape it takes, it should be sustained by special appropriations by Congress.

It should be officered by competent medical men, and not by *political hacks*.

2d. It should go into operation as soon as ten States have Boards of Health.

Very respectfully,
J. W. PARSONS.

From E. M. HUNT, M.D., member of the Section for New Jersey.

METUCHEN, December 31, 1874.

* * * *

I doubt the present expediency of a National Health Council. We are not yet sufficiently organized in States to do effective national work. The American Public Health Association is for the present doing the general work, and what we need is more effective State organizations.

Our State has not yet established a State Board of Health, but has this year a State Sanitary Commission, striving by their report to advocate and secure such a result. It has on it four physicians, the State geologist, and one other lay member.

We tried some six years ago to establish a Board and failed.

* * * *

Very truly,
E. M. HUNT.

From EDWIN M. SNOW, M.D., member of the section for Rhode Island.

PROVIDENCE, November 23, 1874.

* * * *

In relation to a "Health Council for the Nation," I can conceive that a Council whose duties should be confined entirely to investigation, and the diffusion of information and advice upon sanitary matters, if composed of the right men, might do much good and render valuable assistance to the cause of public hygiene.

* * * *

In reply to your questions in regard to a State Board of Health in this State, I would reply there is no State Board of Health in R.I. No efforts whatever have been made to establish a State Board of Health here.

* * * *

Truly yours,
EDWIN M. SNOW.

From D. R. WALLACE, M.D., member of the Section for Texas.

AUSTIN.

* * * *

"A Health Council for the Nation:" let us have it by all means.

* * * *

"When shall it go into operation?" At just the earliest moment it can do so advisedly—as a plan can be *well* matured and agreed upon. Let there be no *faux pas* in the starting off.

* * * *

Very respectfully,
Your obedient servant,
D. R. WALLACE.

From W. E. EAST, M.D., Secretary of the Texas Medical Association, though D. R. Wallace, M.D., member of the Section for Texas.

* * * *

It has been a settled conviction in my mind for years, that a National Health Council would be productive of incalculable benefit to the country. The space of a letter is too confined to admit of one-half being stated. Suffice it to say, it would elevate the science, add dignity to the profession, present a rallying point for all the scattered information of the land, reduce to the test of ex-

periment every theory plausible enough to justify it, by the same standard to prove the value of every discovery or improvement, promote economy by causing one experiment for many, and certain and rapid communication, through the States, of the results, furnish a sure means of saving to the nation millions of dollars. Indeed the subject is worthy of the profoundest consideration.

* * * *

From J. H. SEARS, M.D., through D. R. WALLACE, M.D., member of the Section for Texas.

WACO, TEXAS, Dec. 17, 1874.

* * * *

In place of "Council" I would suggest a Health Department, as completely separate, with suitable laws regulating it, as the Postal or any other Department of Government, with proper officers and with Branch Departments in every State and county of these United States, through which information could be sent and obtained from any inhabited portion of this nation. This would do away with the necessity of State Boards.

2d. "When should it go into operation?" Immediately.

* * * *

Your obedient servant,

J. H. SEARS, M.D.

From J. L. CABELL, M.D., member of the Section for Virginia.

UNIVERSITY OF VIRGINIA, April 22, 1875.

* * * *

I am disposed to favor the scheme as an abstract question, but am not prepared to offer any suggestions as to the time or mode of seeking the aid of the general government.

Very respectfully and truly yours,

J. L. CABELL.

From H. P. STRONG, M.D., member of the Section for Wisconsin.

BELOIT, Jan. 21, 1875.

* * * *

Your first question: "What should be the character and object of a National Health Council?" I answer, it should be authorized and empowered and paid, if necessary, by Congressional enactment, and should be under the direction of the Surgeon General, or the American Medical Association, or both; State branches to be

composed of physicians and laymen; object to be as broad as the name "National Health" would imply.

2d. "When should it go into operation?" Just as soon as it can be properly organized, and the details so far perfected that there shall be no hitch, friction, or failure—and not until then.

* * * *

Very truly yours,
H. P. STRONG.

From JOHN FRISSELL, M.D., member of the Section for West Virginia.

WHEELING, Feb. 9, 1875.

* * * *

Those questions involve the consideration of subjects, of the greatest interest not only to our own profession, but to the whole people.

Although I have given the subject but little attention, I feel safe in saying that a Health Council for the Nation, properly organized and properly conducted, would in the manifold good influences it would bring to bear upon all classes of the profession, be one of the greatest achievements of our century. It has been too much the custom to regard the science of medicine as exclusively curative, designed merely to mitigate the evils which afflict humanity. Its true scope and real mission should be to search out and to spread broad-cast over the land, those great general principles or laws, which concern man's physical well-being, and which when understood and obeyed, secure to him that health and length of days designed by an all-wise Creator. In other words, the subject of hygiene, the grand corner-stone of our profession, should receive that recognition and study its importance demands.

* * * *

In answer to your question, "What should be the character and object of a National Health Council?" I would reply that the standard of excellence cannot be placed too high. Its members should possess the highest order of ability, and be unselfishly devoted to the cause of science; they should above all be practical matter-of-fact men, with ability and attainments, not only to be efficient workers themselves, but should also possess the tact to interest and engage every good practical common-sense worker in the country, to assist in searching out and gathering together facts, data, and statistics, valuable in establishing general principles and

laws, and of teaching their more practical application to the science of medicine.

* * * * *

Could it be hoped that a National Health Council would combine even a portion of the requirements I have enumerated, I would be in hearty sympathy with its immediate establishment. I trust that with your superior advantages for judging, you will be able to demonstrate that it is not an impossibility, but a matter that is thoroughly practicable, and the time to do it has now come.

Your other questions can all be answered by saying, that the State of West Virginia has never established a State Board of Health, and that no efforts have ever been made in that direction. If a National Council should be once established and should make requirements of the different States, making State action necessary to its existence, then our State might be induced to move in the matter. Without some such action or stimulus, it is very uncertain when West Virginia will legislate on these important subjects.

* * * *

Respectfully submitted,

JOHN FRISSELL.

PROF. H. P. BOWDITCH'S PLAN FOR RECORDING CERTAIN DATA RELATIVE TO THE GROWTH OF CHILDREN OF DIFFERENT NATIONALITIES IN ORDER TO ILLUSTRATE PERHAPS THE INFLUENCE OF OUR CLIMATE, ETC.

THE Chairman, in behalf of Prof. H. P. Bowditch, of the Harvard Medical School, presented the following tables illustrating the plan by which the Professor, with the aid of the teachers of the schools, and under the authority of the School Committee, hopes to get the exact height, weight, parentage, etc., of all the children now in the schools of Boston. Their number is about forty thousand.

The Chairman presented them to the Section in the hope that possibly some member would perhaps feel sufficient interest to be willing to carry out similar plans in some of the larger cities of the West or South.

Table No. 1 is an example of the original record of the data of each child. The data given opposite 1, at the head, are given simply as an example of the method pursued.

Table No. 2 contains an analysis of the data contained in No. 1, viz., nationality of parents, ages, etc. etc., of the children. Tables can be made in detail of the age of each child even to months. The Chairman read the following, prepared by Prof. Bowditch, as giving briefly his objects in undertaking the investigation.

"The object of ascertaining the height and weight of the school children in different parts of the country is to obtain the necessary data for determining the rate of growth of the human race under a great variety of conditions; to study, *e. g.*, the effect which climate, nationality of parents, and mode of life may have on the growth of the rising generation. By a comparison of results obtained in this country with those obtained in Europe, it is hoped that light may be thrown on a number of interesting questions, *e. g.*, if the rate of growth of a European race in its native country is compared with the growth of the same race after emigration to this

country, the effect of transplantation into new climatic conditions may be studied. If several European races are compared together with reference to the amount of change produced in their rate of growth by such transplantation, the comparative adaptability of the races to the new climate may be investigated. If it shall be found that when a race emigrates to this country the rate of growth of the female sex undergoes greater variations than that of the male sex, some light may be thrown on the question of the causes of the alleged inferiority of physique of American women.

"Since statistics of this sort are only valuable in proportion to their accuracy, it is important that all measurements of height should be taken without shoes, and on scales graduated to $\frac{1}{16}$ of an inch. Weights should be taken in ordinary clothes, and in taking averages a deduction should be made of the average weight of garments. Quetelet has estimated that in Belgium the weight of the clothes of a man is $\frac{1}{18}$ of his total weight, while those of a woman weigh $\frac{1}{24}$ of this amount. Whether the same fractions would express the truth in this country also can only be determined by experiment."

H. P. BOWDITCH.

TABLE 1.—*Record of the Height and Weight of the Pupils in the School for ..... Boston, ..., 1875.*

No.	NAME	AGE. Yrs.	AGE. Mos.	HEIGHT without shoes. Feet.	HEIGHT without shoes. In.	WEIGHT in ordinary clothes. Lbs.	WEIGHT in ordinary clothes. Oz.	BIRTH-PLACE.	NATIONALITY OF PARENTS. Father.	NATIONALITY OF PARENTS. Mother.	OCCUPATION of parents.	REMARKS.
1	A. B.	14	3	5	2.3	87	11	Boston	Irish	American	Laborer	Color or deformity, etc.
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38												
39												
40												
41												
42												
43												
44												
45												
46												
47												
48												
49												
50												
51												
52												
53												
54												
55												
56												
57												
58												
59												
60												

TABLE 2.—*Nationality.*

FATHER. .....

MOTHER. .....

BOYS.

YEARS.	1 MONTH.			2 MONTHS.			3 MONTHS.			4 MONTHS.			5 MONTHS.			6 MONTHS.			7 MONTHS.			8 MONTHS.			9 MONTHS.			10 MONTHS.			11 MONTHS.		
	Sheet and No.	Height. Inches.	Weight. Lbs.	Sheet and No.	Height. Inches.	Weight. Lbs.	Sheet and No.	Height. Inches.	Weight. Lbs.	Sheet and No.	Height. Inches.	Weight. Lbs.	Sheet and No.	Height. Inches.	Weight. Lbs.	Sheet and No.	Height. Inches.	Weight. Lbs.	Sheet and No.	Height. Inches.	Weight. Lbs.	Sheet and No.	Height. Inches.	Weight. Lbs.	Sheet and No.	Height. Inches.	Weight. Lbs.	Sheet and No.	Height. Inches.	Weight. Lbs.	Sheet and No.	Height. Inches.	Weight. Lbs.
							47	62.3	87.11																							

HEMLOCK POISONING.

THE CASE OF F. W. WALKER, BROOKLYN, APRIL 3, 1875.

SUMMARIZED BY A. N. BELL, M.D.,
OF THE CORONER'S JURY.

DR. DAVID WEBSTER testified that he first saw Mr. Walker, in the Manhattan Eye and Ear Infirmary, in August, 1873. He was then suffering from blepharo-facial paralysis, which was very distressing. At times, when the spasms were most troublesome, he could not see for hours. He was given a letter to Dr. Brown-Séquard, who treated Mr. Walker for nearly a year. One of the most troublesome symptoms was the convulsive winking of the right eye, with extreme diplopia or double vision. For this Dr. F. Falk divided the internal rectus muscle. Mr. Walker was struck by a truck pole in the temple, and being knocked down, the forward wheels passed over his arm, crushing it.

The patient said that he had used many remedies, including electricity and injections under the skin of preparations of strychnia and morphia.

The ophthalmoscope revealed marked changes in the inner structure of the eye. There was a slight staphyloma posticum, common to near-sighted persons, and marked pulsation of the retina.

Mr. Walker said that he had been stabbed in the abdomen in the war, the knife passing through the body, so that the point protruded from his back. After Dr. Brown-Séquard went to Europe, Mr. Walker came to the hospital again. Although he was a free patient, he was frequently treated gratuitously at Dr. Agnew's office. There had been little amelioration of the blepharo-facial spasms.

Dr. Webster continued: I recommended that the extract of conium be tried, and asked Mr. Walker to come to my office on

April 3, 1875, at 10.25 A. M. He came, and 40 drops of a preparation obtained at Caswell & Hazard's drug store was administered. At 10.50 A.M. 40 drops more were given. At 11.15 A.M. 40 more, and at 11.45 A. M. 60 drops more were given. During this time Mr. Walker remained in the office, and the drug he had taken caused no change in his feelings. There were no external symptoms of action of the drug.

After an hour and a half he departed. In our conversation, we discussed the physiological action of hemlock. Mr. Walker asked a great many questions, and seemed thoroughly to appreciate and comprehend the danger of using the remedy. I gave him a prescription for one ounce of Dr. Squibb's fluid extract of conium, and told him to act upon Dr. Squibb's directions in taking the drug. I particularly charged Mr. Walker, over and over again, to stop taking the remedy the moment he felt any effect of the drug, such as muscular relaxation or vertigo. While he was in the office I read to him all that is published about conium in the United States Dispensatory.

Dr. C. R. AGNEW testified: I saw Mr. Walker first in autumn of 1873; sent him to Brown-Séquard; saw him again a few months afterward; took very careful notes of his case; tried to relieve the fearful spasms of his eyelid by dividing the muscle which surrounds the slit between the eyelids; failed; I then saw him from time to time until last week on Wednesday or Friday when I saw him at the hospital. Dr. Webster proposed to give conium; I approved, and by appointment Mr. Walker came to my office on Saturday, April 3, 1875, about 10 A. M.; the remedy was administered by Dr. Webster in his room adjoining mine, the door between being open; from time to time I stepped in to observe the effect; I failed to learn by observation or inquiry that Mr. Walker was in the least affected; once I sent him down stairs to the reception room, when he moved with alacrity; at 1.20 I examined him, when he said that he could not notice any effect; I then bade him good morning, and he went down stairs; I heard, during the three hours that Mr. Walker was present, Dr. Webster explaining the effects of the drug, and Mr. Walker asking questions; at one time, on going into Dr. Webster's room, I saw Dr. Webster with the Dispensatory open, when I sat down and read the account given in it of the drug, and asked some questions as to whether any effect had been produced, and learned that there had not been; I heard Dr. Webster tell Mr. Walker that when he

began to take the prescription given, he must observe the effect, and stop the remedy the instant he noticed any effect on his muscles, stomach, or head, or elsewhere; I concur in the testimony of Dr. Webster; I have not had favorable experiences in the use of this remedy in similar cases; it is not a common case, but is known to the profession; this was a remarkable case; I have had him sit talking with me half an hour, during which time his face would be drawn in all directions, closing his eyes tightly and contorting his features, pursing them up; I consider the case as extraordinary and distressing, justifying the use of extraordinary remedies under scientific direction; he was a man of brains, and of much training, and so remarkable a man that I approved of intrusting the patient with the administration of the medicine by himself, with the caution that was given; it is difficult to account for his proceeding with the medicine, but in the absence of positive knowledge, I should suppose he wanted the fullest effect; I presume from the circumstances that he had full knowledge of the effects; I have no doubt that he had full knowledge of the drug; Socrates dictated to his disciples his symptoms to the last moment, in the same way that Mr. Walker did; I wondered how he could have repeated the dose; the second and third doses were directly in the face of the most positive orders. The extract used at my office by Dr. Webster was the extract of the leaves of conium, so stated to be by the chemist—the apothecary—who filled the prescription. Harley says that the test of the value of a given specimen of conium is its physiological effect; the maximum dose varies with the individual; 260 drops have been known to be taken at a dose, producing its effect and the patient recovering.

Mrs. ALIDA R. WALKER testified that she was the widow of the late Frederick W. Walker; on Saturday afternoon last Mr. Walker came home and said that he had just come from Dr. C. R. Agnew's office; he had been taking conium, he added, but it had had no effect upon him; Dr. Webster, Dr. Agnew's assistant, had advised him to go to Dr. Squibb's factory and get a more trustworthy preparation of the drug; he had got the preparation, and said that he was going to take it immediately; Mrs. Walker asked her husband whether he had better not take some nourishment; he replied that he thought he had better not, because he believed that the medicine would have a better effect upon an empty stomach; he was to take 50 minims each half hour, until the results expected were obtained; Mrs. Walker gave her husband the first 50 minims

at 4.10 P. M., and then, at his direction, took paper and pencil and wrote, at his dictation, the feelings he experienced; he told me that Dr. Agnew had requested him to do this; the memorandum read as follows: 4.10 P. M. took 50 minims Squibb's fluid extract of conium (hemlock); 4.40 P. M. effect very decided in dizziness, relaxation of muscles and limbs; 50 minims more then taken; difficulty of walking immediately, and want of power to control movements; forced to lie down, but no mitigation of spasm; limbs and legs weak, unable to hold up head, speech thickening some, pain and heaviness in top and back part of head; pulse 56.

5.15 P. M., took 50 minims; some nausea, some tremor at base of clavicle and in muscles across the chest, just above the sternum; no diminution of spasms about eyes, nor of photophobia.

5.25 P. M., drowsiness, inclined to sleep.

5.40 P. M., eyes difficult to open, speech difficult, fulness in throat, prostration nearly complete, diplopia (double sight) vastly increased.

6.10 P. M., nausea, twitchings on right side, unable to articulate, eyes closed, fulness almost to suffocation in throat, pulse about 60. At 8 minutes past——

Mr. Walker felt his own pulse to ascertain the number of beats a minute, and his wife marked the time for him. After he became unable to articulate, he made signs that he wished to have his collar loosened. He also signified that he was thirsty. A cup of coffee was brought, but he was unable to drink it—he could not swallow. Mr. Walker's son came in soon afterward, and Mr. Walker signified that he wished to have electricity applied. He had used electricity a great deal for the paralysis of the facial muscles, and had made a business of applying it to others. He was asked whether he would have galvanism or the Faradaic current. He signified that he would have the Faradaic. The battery was taken up to him, and he indicated that he wished one pole to be applied to the back of his neck. One of the electrodes was placed as desired, and he attempted to take the other in his hand, but dropped it, being unable to hold it. Mrs. Walker then raised him in her arms. He made an attempt to say something, and fell back suddenly, dead. I don't believe that he had the least idea that he was about to die. He did not suggest taking another dose of the preparation at 5.40 P. M., half an hour after he had taken the last previous dose. He complained then of feeling great nausea. He said that he received the instructions for taking

the medicine from Dr. Squibb. In answer to a question by Dr. Bell, Mrs. Walker said that her late husband had been considerably afflicted with rheumatism. She had never known of his having palpitation of the heart, or being troubled with shortness of breath on going up stairs.

Dr. J. C. SHAW testified that he had made a *post-mortem* examination of the body in the presence of the coroner, Drs. Bell, Segur, and others. In the brain was a good deal of venous congestion. Falx cerebri slightly thickened and opaque on its anterior portion. Arachnoid and pia mater very much thickened and vascular, but turning readily from brain substance. Cruræ cerebri slightly soft. Right crus tore in removing the brain, owing to its softness, and presented a discolored appearance. Right vertebral artery much larger than normal, and had undergone atheromatous degeneration. Left vertebral artery smaller than normal, and had also undergone atheromatous degeneration. Basilar artery larger than normal, and also atheromatous; and so, too, the post-cerebral and middle cerebral arteries. These changes extended into the smaller divisions. A small foreign growth (about as large as a grain of coffee) was found on the pia mater, just in the fork at the commencement of the cruræ cerebri. Puncta vasculosa not more than nominal. Choroid plexus very vascular and thickened, otherwise brain apparently healthy. Weight of brain 57 ounces.

Chest. Lungs very much congested, perfectly full of blood. I do not mean hypostatic congestion. They were exceedingly soft, and in places tore during the removal. Heart weighed nineteen ounces. Valves perfect, not the slightest roughness on them. Walls of heart healthy. Left ventricle perhaps a trifle thicker than normal in proportion to the whole.

Coronary arteries quite free. Aorta—found only one small point of atheromatous degeneration visible and about the size of a pin's head, about half an inch from its origin. No fluid in pericardium. Abdominal viscera sound, except an undue amount of fat. In my opinion death resulted from asphyxia due to poisoning by conium.

Dr. E. R. SQUIBB was the next witness. He submitted a carefully written statement as follows: The first and only time I saw the deceased was about half past two o'clock on Saturday afternoon, April 3, 1875. He told me his name was Walker, and that he had been sent to me by Drs. Agnew and Webster, with a written prescription, and with special instructions to see me person-

ally, and to trust his message to no one else. He presented the written prescription to me, and I saw that it called for one ounce of fluid extract of conium. He then told me he had been long affected with involuntary contractions about the face and eyes. Had tried unsuccessfully many plans of treatment, and that he now, at the suggestion of Drs. Agnew and Webster, wanted to try the use of conium. He said that Dr. Webster had given him a fluid extract of conium in Dr. Agnew's office so as to watch the effects, had given him four doses at intervals of about half an hour, the first three doses consisting of forty drops each, and the last dose of sixty drops, making 180 drops in all. This he told me had been taken without any sensible effect upon him in any way, and that Drs. Agnew and Webster had attributed its want of effect to bad quality in the medicine. He told me they had sent him to me to try to get some of better quality, which might be stronger, and therefore directed him to take particular instructions from me in person, as to how much to take and how often to repeat the dose, and to follow my instructions closely. I told him that I could not supply his prescription up stairs, where we then were, and asked him to return to the office with the prescription, where it would be properly put up for him; I then gave him verbally the directions to take fifty minims of this fluid extract of conium seed every half hour until he should feel some effect from it; I told him that the effect to be watched for was a kind of intoxication. That this usually commenced by dizziness and muscular weakness and relaxation, and that when he felt this or any other change in his condition after taking the medicine, he should stop taking it. In reply to his remarks regarding my own deformity of face and eyes, I said we all had our troubles of one kind or another.

The matter then passed from my mind entirely, until, on the following day, Sunday, when I was called out of church to see Dr. Webster, who told me that Mr. Walker died near seven o'clock on Saturday evening, and he gave me the few details that were then in his possession after a short visit to his distressed family. I am acquainted with the use of conium within the past ten years for overcoming muscular spasms, and considered Mr. Walker's condition to be one well adapted to realize its good effects, and was not at all surprised that Drs. Webster and Agnew wished to use it in his case; now that I know the full history of his disease, I should have blamed them had they dismissed the case without using the

remedy; I consider that Drs. Webster and Agnew in their attempt to use this remedy, applied it in a way so cautious and so careful as to deserve commendation; and that when they failed in getting the desired effect, and sent their patient to me, the careful and minute directions they gave him, relieve them entirely of all reasonable responsibility in the unforeseen result, and transferred that responsibility to me. I might have gone home with Mr. Walker and have given him the medicine under my own personal supervision, as Drs. Webster and Agnew did; and had I for a moment suspected or feared that he would have so disregarded his thrice repeated instructions, of course I should have gone with him; but if in order to avoid such accidents of mismanagement, I or any physician, was bound to follow each portion of potent medicine, and observe its effects in use until it ceased to be dangerous through mismanagement, our vocation would be at an end. I knew well that I was dealing with a potent medicine, but one which I did not then, and do not now, consider very deadly nor very dangerous.

From the fact that the deceased had taken a moderate quantity of the medicine dispensed under the same name, and which should have been of the same strength, I inferred that he was not very sensitive to the action of this drug, and attributed the want of effect to insufficiency of dose as well as to inferiority of quality. This induced me to increase the dose from the uncertain quantity of forty drops to the more definite quantity of fifty minims. Then, knowing well that the effects of this medicine are prompt and pass off entirely within a few hours, and that a decided effect was necessary to this particular use of the drug, I adhered to the same interval of half an hour between the doses that had been adopted by Dr. Webster; I also knew that any possible effect from that which he had taken in Dr. Agnew's office must by lapse of time have passed off before he could begin upon the new portion; had he followed the directions I gave him, Mr. Walker would never have taken the second dose—much less the third one—although, had I been present, I should probably, or almost certainly, have given him the second one; why he ever took the second and third doses, as there was no reasonable ground for misunderstanding the directions I gave him, and as he certainly did understand them, can only be conjectured; he, however, acted as though he believed his advisers were timid and overcautious, and

as though he was dissatisfied with the effects which had been described to him, and was seeking some ideal effects of his own.

It is a long established and well-known characteristic of this medicine that it does not disturb the intellect, and it is plain, from his detailed account of himself while under its influence, that it did not disturb his intelligence, so that his bad judgment or bad theory in continuing the medicine against all his positive instructions, must have been a natural quality of his judgment and not the result of the action of the medicine on his brain. If his minim measure be anything like correct, the dose he took was not a large one, and the cases on record where conium has been most successful in overcoming muscular spasm have on the average been treated by doses much larger.

In the cases published by Dr. John Harley, of London, who is one of the highest and best authorities on the uses of this medicine, the average dose exceeds that taken by Mr. Walker by one-half, while many of the doses, though not considered exceptionally large or at all dangerous, far exceeded the whole quantity taken by Mr. Walker in his three doses. But Dr. Harley repeats such doses only once or twice a day, though he often keeps them up for weeks, as would have been required in Mr. Walker's case. A prominent physician of this city had a case in which a woman took sixty minims or more of this same preparation every four hours, until nine or ten doses had been taken, with profound intoxication, but with safety. In another instance I knew of a man who took at least 240 minims at one dose with the same results, but with very rapid recovery. And another instance wherein a girl took 120 minims, and repeated it in an hour. This was a case of brain disease which afterward proved fatal. Doses of 60 minims are common, while larger ones are not uncommon, and are often necessary.

These circumstances make it doubtful to my mind whether Mr. Walker died from the effects of conium alone. The testimony of his wife in regard to the manner of his death convinces me that he died from what is called cardiac syncope, or heart fainting; and although I have no doubt that conium caused this heart fainting, I have some doubt whether this quantity of conium could have produced heart fainting in a healthy heart in any other way than as a pure accident, which could have no more been foreseen than the accident by which he nearly lost his life when run over by a truck.

Nevertheless, his heart had been examined during his treatment, without the discovery of any disease.

The fluid extract of conium is not a special or peculiar preparation made by me, nor one in which I have any individual claim or interest. It is, on the contrary, an officinal preparation of the *United States Pharmacopœia*, and as made by me is no better nor stronger than it is ordered to be, if as strong. The Pharmacopœia directs all fluid extracts to be so made that each minim shall represent the strength of one grain of the drug from which it is made, and thus the physician who knows the dose of the drug in grains knows the dose of the fluid extract of that drug in minims. I only profess and try to make this and similar preparations practically as nearly up to the standard of the *Pharmacopœia* as is practicable, and am more liable to fall below than to exceed the standard strength.

The *United States Pharmacopœia* and *United States Dispensatory* are not the same thing. The first is the national standard, while the *Dispensatory* is a commentary on this and other *Pharmacopœias*, and is a private enterprise of its authors, Drs. Wood and Bache. These authors were good authority up to the time of the latest edition of their work. But this last revision is now many years old, and does not embrace the last revision of the *Pharmacopœia*, and therefore cannot now be considered as recent authority. Minims and drops are not the same thing. A minim is a definite fixed measure, namely the 480th part of a fluidounce, while a drop varies in quantity with the size and shape of the mouth of the vial from which it is dropped, and with the thinness and thickness of the liquid. They never can be equivalent in quantity, except by accident, and drops can only be accidentally twice alike. Dr. Agnew informs me that the fifty drops of the fluid extract of conium used by him in Mr. Walker's case, measured about twenty-five minims, while fifty drops of the fluid extract of conium-seed which I gave to Mr. Walker, dropped from a bottle similar to the one he had, measured sixty minims. Hence physicians can never be practically accurate or safe in prescribing doses by dropping. Minim measures are not always accurate, but are commonly inaccurate, though far less so than measuring by drops. They are inaccurate for want of skill and care in making.

This is a free country: people can get any kind of medicine or any kind of measure for it that they want, just as they can get any kind of doctor they want, or may doctor themselves to any extent

they please, even to death, as in Mr. Walker's case. Any properly educated person can make fluid extract of conium-seed by the directions given in the Pharmacopœia. There is no secrecy or any great difficulty about it, nor does it require much knowledge or skill.

This and other medicines are so variable, less from want of skill and knowledge in making them than from want of common honesty in bringing the materials to make them of. A cheap and inefficient drug, when made into a fluid extract which shall fairly represent it in the official standard proportion of minims for grains, will only be so much the more dangerous in its liquid form, because the landmarks for judging of quantity are, as with powdered drugs, mainly removed.

The witness then described the plant conium and the method of preparing the conium juice and conium extract at length, and further said: In the case of Dr. Harley, in which a child eight years old took fifty minims of the same preparations made by me, and within thirty minutes, if I remember aright (I am not certain about the number of minutes), the effect was so moderate that sixty minims more were given. The effect does not generally pass off within five or six hours.

A juror asked: "As the deceased stated, after taking the second dose, he found no mitigation of spasms, whether he was not justified in expecting, as the desired result of the medicine, a mitigation of the spasms?" The witness said he was not so justified by any instructions or directions from me. I did not allude in those instructions to the spasms; I told him to stop when he felt any effect, telling him that the effect would be intoxication. Under this intoxication, one will do all the things that a drunken man will do, but will not be irrational as one drunk from alcohol. The increase of diplopia spoken of in the deceased's notes was caused by the action of the medicine; I do not think that 150 minims of my extract, which Mr. Walker took, was a deadly or a dangerous dose, even if taken all at once; a prisoner in Sing Sing Prison took a tablespoonful, 240 or more minims, without serious effect; the circumstances under which Mr. Walker took the medicine, he being perhaps excited in consequence of the treatment, and taking it upon an empty stomach, would make him more susceptible to the influence of the drug than he would be ordinarily.

Mr. CHAS. L. WALKER and Mr. JNO. H. WALKER, sons of the deceased, confirmed the evidence of Mrs. Walker, and stated that

deceased had for twenty years or more used a family medicine chest of homœopathic medicines, but never treated himself; he may have prescribed for trifling ailments. For about the last six months, he had advertised himself by a sign as Electrician, and was in the habit of applying it to such persons as called upon him; whenever any such persons required medicine, however, he always called in, or sent them to a practising physician.

On the Wednesday before his death, he sold out a policy for $10,000 which he held on his life, thinking that he could do better with the money in his business, saying that the chances of his life were that he would live at least ten years.

The jury rendered the following verdict:—

That the said Frederick W. Walker came to his death April 3, 1875, at No. 300 State Street, by the medical use of the fluid extract of conium. First of the extract of the leaves 180 drops, obtained from Caswell & Hazard, New York, prescribed and administered in four doses of forty, forty, forty, and sixty drops at intervals of about half an hour, by Drs. C. R. Agnew and David Webster, without any apparent effect. Second after an interval of four hours by about 150 minims of the fluid extract of conium-seed, prescribed by the said Drs. Agnew and Webster, dispensed and directions for taking given by Dr. E. R. Squibb (of his own manufacture) in three doses of fifty minims each at intervals of about half an hour, and that the deceased suddenly died in about one hour and a half after taking the third dose.

Moreover we find that, from some inappreciable cause to us, the medicine acted with extraordinary potency. In witness whereof we, the said jurors, as well as the coroner, have to this inquisition set our hands.

(Signed) A. N. BELL, M.D.,
WILLIAM P. LIBBY,
ALBERT VICKERS, M.D.,
D. D. WHITNEY,
S. W. MOORE,
B. A. SEGUR, M.D.,
WILLIAM RICHARDSON,
HENRY C. SIMMS, M.D., *Coroner.*

CLIMATOLOGY AND DISEASES OF NEBRASKA.

By JAMES H. PEABODY, M.D.

It seems proper in this the first report on State Medicine from Nebraska, to give some slight description of location and climatology.

Nebraska, though one of the youngest States in the Union, bids fair to be one of the most flourishing, owing to the extreme salubrity of her climate, her geographical position, and medical topography. She took her start in 1864, at the commencement of that great enterprise the Union Pacific Railroad, which unites with its bands of iron the Atlantic and the Pacific, thus the whole world pouring into America the rich commerce of China, Japan, and the Indies.

By a glance at the map it can be seen that the State lies in that belt which, from the Atlantic to the Missouri, teems with the greatest number of inhabitants. Her soil is such that for three hundred miles to the west of the Missouri, it must soon be peopled as thickly as Indiana or Illinois. Lying between latitude 40° and 43° north, embracing a breadth of two hundred and eighty miles, and longitude 95° to 104° west, four hundred and twelve miles, with a rich loamy soil, Nebraska is destined to be one of the wealthiest agricultural States in the Union. Its lovely undulating prairies, with an elevation of from 900 to 6000 feet above the sea, susceptible of affording the richest crops even from the highest hills, scarcely an acre of marsh land in the whole State, an abundance of pure water supplied by perennial springs, with its invigorating climate, offer every inducement for rapid settlement.

There have been no epidemic diseases in the State as yet. The climate is perfectly exhilarating, and, as far as my observation, covering a period of over ten years, goes, excellent for incipient phthisis, the air being generally so dry that, notwithstanding the

sometimes rapid changes in temperature, the consumptive is not nearly so much affected as in a much warmer and more equable climate, where the air is more saturated with moisture.

I append hereto a list of some cases collected from hospital and private practice; from them a slight idea of the prevailing diseases may be obtained. I regret that they are not more full, but in the absence of any law, they are all I have been able to collect. You will observe, that, with the exception of a slight catarrhal fever or ordinary cold hardly deserving a place among the zymotic diseases, the percentage of such to the whole is very slight. Typhoid fever is scarcely ever seen, only seven cases occurring, out of three thousand of various diseases collected. The remittents are also of a very light grade, yielding to proper treatment in ninety-nine cases out of a hundred, or even more, as you will observe from the ratio of mortality, only one death occurring in one hundred and eleven cases. Diarrhœa and dysentery, also, are far less fatal than in more thickly settled communities, only four deaths occurring out of two hundred and eleven cases. Scarlet fever has generally been of short duration, but frequently malignant; occurring among the children of emigrants just coming to the State from the crowded communities of the East, worn out and exposed to severe weather, the mortality has been considerable.

Diphtheria I have never seen in the State. Pneumonia and bronchitis prevail during the spring, and are sometimes quite severe.

The percentage of consumption requiring any treatment is very light compared to the whole number, only thirty-one cases occurring out of nearly three thousand of various diseases treated. It is unnecessary to occupy time by comment, as any one interested can refer to the tables hereto appended.

Like California we have our season of rain commencing in March and ending in June. The rain comes in heavy showers, rarely lasting more than a few hours, giving way to a bright and beautiful sky, thus continuing for two or three months at the time most needed by the husbandman. The heat of the summer is *not* excessive, and the constant prairie winds make the nights cool and delightful. Our autumn is perfectly exhilarating, being a long continued Indian summer, extending some years away into December.

The winters, though sometimes cold, are scarcely felt, owing to the dryness of the air. Of course it is impossible as yet to tell in

so sparsely settled a State what its eventual standard of health may be, for as yet it is almost in its virgin condition, only having a population of some three hundred thousand. What the effect of the rapid settlement now going on may be, the rapid turning up of thousands of acres of the rich soil to the sun may produce, remains for future statistics to show.

It does no harm to speculate, although many difficulties lie in the way of a definite solution of the question of climatology and epidemic diseases.

The rapid pouring in to our cities and counties of emigrants from the East, must bring more or less of smallpox, measles, and scarlatina, but so far these diseases have failed to spread, the extreme dryness of our climate serving to check them.

At the risk of being accused of repetition, I will again say that the influence of our climate on strumous diseases will ever be for good; the weather allowing of out-door exercise for eight or nine months in the year, certainly must have the effect to prevent the development of tubercle.

The almost entire exemption from all paludal matter is another high recommendation, for every one who has paid attention to the subject must know that this is a great cause of consumption.

The only objection to the climate is its occasionally severe days in winter, the thermometer sometimes for a few days ranging from ten to fifteen below zero. In my desire to have a complete report for the whole State, I addressed letters to all regular physicians whose names I could find, but am sorry to say only received replies from three, whose remarks are herewith submitted; they uniformly agree with me in regard to the facts set forth.

Dr. GEORGE TILDEN, of Omaha, writes as follows:—

In a new State the subject of malarial diseases is one of vital importance. Prominent among the causes and conditions of this class of affections may be mentioned: a fertile soil; luxuriant vegetation, and poor drainage. Our soil is exceedingly rich, and our vegetation most abundant, but the other condition, poor drainage, is not present; on the contrary, we have in this State a most perfect system of natural drainage. The natural slope of the country towards the Missouri River, for a distance of four hundred miles, is about eight feet to the mile. The banks of the rivers and creeks are generally high and well defined, rarely overflow, and even when they do, no ill effects whatever follow, owing to the porosity

of the soil (no hardpan near the surface to hold the water), and the rapid evaporation.

Again, the atmosphere is very pure and dry, preventing the pernicious miasmatic effects which usually result from decaying animal and vegetable matter.

No lakes, ponds, swamps, morasses, or stagnant water are to be found in the State. The above are only a few of the conditions which both explain and confirm the indisputably established fact that Nebraska has less malarial disease than any Western or Southern State. Cases of this class of disease are very rare, and when they do occur are mild in character, yielding very readily to simple treatment.

In regard to epidemics, I think it may be safely asserted that there has never been one in this State. Scarlet fever, measles, or smallpox have never appeared here epidemically.

You are anxious to have me state, as fully as possible under the circumstances, the influence of this climate on consumption. The vital statistics of the United States for 1870, set forth a fact of the highest importance to us, relative to this deadly enemy of mankind; one which is extremely gratifying and encouraging to the inhabitants of the State, and to those who may contemplate a residence here. These statistics, together with our own, show with mathematical certainty that Nebraska is the most favorable State in the Union for the prevention and control of this great scourge.[1] Here, in proportion to the population, consumption carries her smallest bills of mortality. But this authoritative statement will not surprise in the least those who have resided here for the last ten or fifteen years, and have given any attention whatever to this subject. They have stoutly contended that this is a most favored spot for those predisposed or suffering from this malady.

* * * *

In speaking of malarial diseases, I showed that we have no soil moisture, properly or medically so called, and the tables of Doctor Bowditch, of Boston, which are based on the observations and

[1] Inasmuch as in the statistics of the U. S. Census the subjects of age and sex of inhabitants are not considered in connection with the death-rate from consumption, or other diseases, and as these are controlling elements, no such comparison as is here presented can be properly made. By direction of the Section, these comparisons by States are, for this reason, omitted in publishing this paper. Stars are inserted to show where such omissions occur.

HENRY B. BAKER,
Secretary of the Section.

statements of physicians, show that the chief cause of consumption is soil moisture.

* * * *

Another fact well worthy of notice is, that we have very little skin disease; the cases are few and the type mild, the cure easy and speedy.

* * * *

Too much importance can hardly be attached to our astonishing immunity from bronchitis and consumption. Our winds change with the seasons; the prevailing winds in winter are uniformly from the north and northwest; in the spring, east and northeast; summer, south and southwest, and in the fall, southwest. At long intervals they attain considerable velocity, and in the winter they are sometimes violent from the north and northwest. The air is dry and pure, and contains on an average less than half the amount of moisture necessary for complete saturation. It is extremely rare for the humidity to reach one hundred per cent.

Our climate has many most excellent features that I should be pleased to notice in detail, but it is not necessary to occupy the space. I will, however, before closing, mention one of them, namely, the peculiar character of the nights of the summer months. It matters not how warm or oppressive the day may be, the nights are uniformly cool and delightful. Sleep, the great restorer of the mental and physical energies, is never disturbed by an oppressively warm atmosphere. Those who have lived here for fifteen years declare this to be true. This may help explain why even in the summer months our people can toil so hard, endure so much, enjoy such remarkable health, and are so elastic in spirit. This is in strong contrast with the facts in most other States. I merely mention the fact; it deserves to be dilated upon at length. In fine, the atmosphere of Nebraska is very pure, clear, dry, elastic, and bracing, and promotes in a high degree, mental and physical activity and development. Take the seasons as they come and go, and average them, and no State can make such goodly promises as this for health, development, and longevity.

Respectfully,

GEORGE TILDEN.

Dr. VAN BUREN, of Fremont, writes as follows:—

FREMONT, May 1, 1874.

DEAR SIR: In answer to your inquiry for statistics or observations on medical topography, climatology, epidemic or other dis-

eases of this section of Nebraska, I can only state that reliable statistics cannot be had; but information from old inhabitants and my own observations, teach the superior advantages of this climate for invalids, especially those prone to pulmonary diseases, over the less dry and lower regions East.

Some reasons for the above conclusions are as follows:—

1st. The altitude, 1266 ft.

2d. The prevailing winds N. W. and S. W. and dry.

3d. Dry soil, somewhat sandy in the valley.

4th. The large proportion of sunshiny days: Summer 72, autumn 72, winter 70, spring 62 days. The temperature thoughout the year varies considerably, ranging from 96° above to 10° below zero, though the thermometer only reached the latter figure twice during the past winter, and the observations were taken at 7 A. M; while the high temperature was taken at 3 P. M. in July. The record of the thermometer taken the past winter at 7 o'clock A. M. on the bluff north of Fremont shows that the temperature was below zero in December twice, in January seven times, in February four times—only thirteen times in 90 days. Epidemics are unknown. All zymotic diseases are of a milder type and more amenable to treatment than in the army or in the East. Phthisis has not been known to originate here except in those of inherited tendency, and at least 90 per cent of consumptives who have come to this climate from the East have been benefited if not cured, and there is no known instance of any being made worse.

Fraternally yours,
E. VAN BUREN.

Dr. LIVINGSTON, of Cass County, remarks:—

This county is situated immediately south of parallel 41° north, and is bounded on the north by the Platte River, on the east by the Missouri, on the south by the south boundary of Township Ten, and on the west by Saunders and Lancaster Counties.

Its hydrography is intimated by the above boundaries. On the north and east it is somewhat broken by small streams flowing into the Platte and the Missouri Rivers; along the south boundary the Weeping-water River runs east to the Missouri, receiving many small streamlets in its course.

There is a large amount of river bottom along the streams named, which are all swift in current. There is no marshy soil except in very wet weather in a few sloughs scattered through the county.

The altitude above the sea is 1045 feet. Population 15,000, composed principally of Americans, some German, and a few Irish settlements; the occupation is principally farming. There are several villages. The principal town is Plattsmouth, situated, as its name indicates, near the confluence of the Platte and Missouri.

The surface is rolling prairie, about one-half of which is cultivated; there is little or no timber, except along the streams named, which are pretty thoroughly fringed with oak, walnut, hickory, etc.

The geological formation is the upper carboniferous. The soil in the bottoms is sandy on the prairies, rich loam overlying limestone, except on the northwest portion, where a ferruginous dark sandstone is found.

The water is obtained principally from springs and wells, and is considered remarkably pure and good. In the towns a great deal of cistern water is collected and used.

FEVERS:—Intermittent and remittent fevers make their appearance usually about July, in sporadic cases, and never in any large numbers.

Typhus fever has never been seen; typhoid fever occurs occasionally in the neighborhood of newly broken ground. Smallpox has not been seen since 1870, when thirteen cases occurred, all recovering. Vaccination is, through the influence of physicians, very generally performed.

Measles occurred here this spring in a very mild form, requiring little treatment.

Phthisis pulmonalis has never originated here, and persons who have come here with it are generally benefited.

Pneumonia is not infrequent in the winter months, and sometimes very severe.

Occasionally when the summer months are very dry, diarrhœa and dysentery prevail, but are not very fatal.

Very few cases of diphtheria occur; I have not seen one in the last year.

Croup in the winter season occasionally claims its victim, although it is rare.

Erysipelas has affected a few persons in the past year, but it was generally only in cases who were predisposed to it, and who had suffered attacks formerly.

Cholera infantum affects children in the stage of dentition during the hot summer months, but for the last three years has not been fatal.

Rheumatism was more prevalent in the winter of 1873 than I remember it to have been in fourteen years.

Capillary bronchitis, especially in children, has been observed during the prevalence of pneumonia, but never as an epidemic, the cases being isolated, occurring at intervals.

Uterine displacements are more common than I have observed them at other points; these are probably provoked by over-exertion in drawing water from our deep wells.

Labor is seldom complicated with any difficulties.

Puerperal peritonitis prevailed to a small extent this winter, about one-fourth of the cases perishing.

I append hereto tables heretofore mentioned in regard to prevalent diseases in Omaha.

Also tables of mortality rate for year ending July 31st, 1874. Omaha being the only city where a register has been kept for the period of one year, it is the best I can do, and will serve in a slight degree to substantiate the facts reported above. Omaha has a population of upwards of 20,000; is situated on the west bank of the Missouri River, in latitude 41° 15′ 43″, longitude 95° 55′ 47″ west from Greenwich. The elevation above the level of the sea is 996 feet.

TABLE No. 1.—*Table showing Death-rates per thousand of Inhabitants in following named Cities for the year* 1873.

New Castle.	Leeds.	Birmingham.	Manchester.	Liverpool.	London.	Great Britain.	Omaha.	Providence, R. I.	San Francisco.	New Orleans.	Cincinnati.	Boston.	Chicago.	Brooklyn.	Philadelphia.	New York.
30.3	27.5	24 8	30.2	25.9	22.4	..	12.9	21.9	20.3	35.8	22.8	28.4	23.9	25.2	20.3	27.9

I subjoin a table showing the relative prevalence of the different classes of diseases as appearing in several of the above-named cities.

TABLE No. 2.

Deaths from	New Castle, 1873.	Birmingham, 1873.	Liverpool, 1872.	Omaha.	San Francisco, 1873-74.	New Orleans, 1873.	Cincinnati, 1873.	Boston, 1873.	Chicago, 1873.	Brooklyn, 1873.	Philadelphia, 1873.	New York City, 1872.
Zymotic diseases . .	25.8	26.6	24.9	25.	22.6	32.3	34.9	31.0	37.8	31.8	18.8	36.2
Constitutional diseases .	14.3	13.5	16.7	11.7	17.4	14.4	14.4	20.9	12.8	17.6	18.5	20.2
Local diseases . .	40.3	38.3	38.9	25.3	36.2	38.8	37.3	32.1	36.9	34.9	41.6	33.4
Developmental diseases	14.3	16.6	12.9	11.7	10.7	10.6	9.3	12.0	8.6	12.9	17.2	6.2
Violence . . .	4.1	4.9	4.3	4.6	4.2	3.1	3.4	3.9	3.9	2.7	3.7	4.0
Unknown causes . .	.1	1.0	2.3	17.5	8.9	.8	.7	.1	..	.1	.2	..

No. 3.—*Comparative Table of Deaths from various diseases.*

Number of Deaths to each 10,000 inhabitants from	Omaha, 1873-74.	San Francisco, 1873-74.	New York, 1872	Philadelphia, 1873.	Brooklyn, 1873.	Chicago, 1873.	Cincinnati, 1873.	New Orleans, 1873.	Buffalo, 1873.	Providence, R. I., 1873.	Liverpool, 1872.	Birmingham, 1873.	Newcastle, 1873.	Boston, 1873.
Scarlatina	1	19	10	4	7	3	16	..	4	14 2	4	17	34	17
Smallpox	2	2	9	..	2	13	2	24	2		1	4	..	11
Measles	1	..	5	..	1	3	3	3	3	4	9	4	5	..
Croup, diphtheria, and whooping cough	3	6	17	6	18	9	6	8	4	7	17	9	..	6
Typhus and typhoid fever .	3½	4	4½	5	2½	7	3	3	6	7	8	6	4	9
Consumption . . .	8½	25	43	31	31	16	26	42	14½	30	32	23½	..	43
Pneumonia, bronchitis, and other lung diseases . .	12½	14	34	26	26	18	12	26	10	18	45	43	..	28
Infantile diarrhœa (cholera infantum)	21½	5	42	15	25	34	9	7	14	11	17	16	..	24

TABLE No. 1.

This table shows the comparative death-rate of sixteen cities. It will be observed that that of Omaha is less than half as great as many of the larger cities.

TABLE No. 2.

Class I.—ZYMOTIC DISEASES.

During the summer of 1874 the weather was unusually hot, the thermometer standing as high as 98° to 120° in the shade for several days together. This caused a great number of deaths from cholera infantum, more than half the number of the zymotic being

from this disease alone. Ordinarily the rate compared with other diseases occurring here would not be greater than from 15 to 18 per cent.

Class II.—Constitutional Diseases.

The percentage of constitutional diseases, which includes phthisis pulmonalis, it will be observed is very light.

Class III.—Local Diseases.

The mortality here is larger than I supposed it would be, although, as I have previously remarked, pneumonia in the changeable weather of the spring months is sometimes very severe.

Class IV.—Developmental Diseases.

These diseases are about as in other cities; about 80 per cent. here are attributed to premature births this year.

Class V.—Violent Diseases.

This class makes a better showing than one would expect of a frontier city, like Omaha.

Class VI.—Unknown Causes.

This class is unusually large, owing to the fact of our city being infested with a great number of quacks, who are so utterly ignorant as to be unable to give any cause of death.

There were no deaths from smallpox; but two deaths from scarlatina and two from measles, all that occurred during the year.

The death-rate from consumption is very slight, less than in any city of the same population perhaps. Pneumonia and bronchitis claim a less percentage of mortality here than that of any city I have been able to obtain statistics from for the corresponding year.

The mortality from cholera infantum has been excessive, but not as great as that of some other places during the same period.

It is true that our State is young, and our city small as yet, but it is a source of congratulation to have a total mortality of only 12.9 to every thousand of our population, while other cities rate all the way from 20 to 35 to the thousand.

Report of Sick and Wounded in Hospital and Private Practice, Omaha, Nebraska, 1871, 1872, and 1873.

CLASS I.—ZYMOTIC DISEASES.

Order 1.—MIASMATIC DISEASES.

	Cases.	Deaths.
Typhoid fever	7	2
Marasmus	6	1
Remittent fever	111	1
Intermittent fever	164	
Congestive fever	3	
Acute diarrhœa	152	
Chronic diarrhœa	28	1
Acute dysentery	26	1
Chronic dysentery	5	2
Sporadic cholera	1	
Erysipelas	12	
Roseola	12	
Whooping cough	12	1
Smallpox	4	1
Varioloid	16	
Measles	58	2
Scarlet fever	31	7
Varicella	9	
Mumps	33	
Catarrhal fever	192	
Debility from miasma	32	
Cholera infantum	39	9
Total	953	28

Order 2.—ENTHETIC DISEASES.

Syphilis	24	
Gonorrhœa	36	
Orchitis	2	
Balanitis	4	
Total	66	

Order 3.—DIETIC DISEASES.

Delirium tremens	7	
Inebriation	1	
Chronic alcoholism	4	
Total	12	

CLASS II.—CONSTITUTIONAL DISEASES.

Order 1.—DIATHETIC DISEASES.

Gout	2	
Acute rheumatism	43	
Chronic rheumatism	3	
Cancer	4	1
Tumours	4	
Total	56	1

Order 2.—TUBERCULAR DISEASES.

Consumption	31	6
Hydrocephaloid diseases	2	2
Total	33	8

CLASS III.—PARASITIC DISEASES.

Itch	3
Tapeworm	5
Other intestinal worms	2
Total	10

CLASS IV.—LOCAL DISEASES.

Order 1.—DISEASES OF THE NERVOUS SYSTEM.

Apoplexy	2	2
Angina pectoris	3	
Aphonia	3	
Epilepsy	3	
Headache	43	
Insanity	8	
Infantile convulsions	13	1
Inflammation of the brain	6	1
Inflammation of membranes of the brain	3	
Inflammation of spinal cord	16	
Cerebro-spinal meningitis	2	1
Catalepsy	1	
Neuralgia	48	
Paralysis	4	
Sunstroke	4	
Nervous debility	6	
Insomnia	3	
Chorea	1	
Total	169	5

Order 2.—Diseases of the Eye.

	Cases.	Deaths.
Amaurosis	2	
Conjunctivitis	38	
Inf. with rupture of iris	2	
Mucocele	2	
Total	44	

Order 3.—Diseases of the Ear.

Inflammation of internal ear	5	
Otorrhœa	13	
Other diseases of the ear	2	
Total	20	

Order 4.—Diseases of Organs of Circulation.

Dropsy from heart disease		
Inflammation of the pericardium	1	
Cellulitis	1	
Total	5	

Order 5.—Diseases of Respiratory Organs.

Asthma	13	
Acute bronchitis	78	
Chronic bronchitis	24	1
Croup	15	2
Epistaxis	1	
Inflammation of the larynx	15	
Inflammation of the lungs	67	10
Inflammation of the pleura	18	
Hemorrhage from the lungs	4	
Other diseases of this order	10	
Total	245	13

Order 6.—Diseases of the Digestive Organs.

Colic	23	
Constipation	54	
Cholera morbus	36	
Dropsy from hepatic disease	3	1
Dyspepsia	73	
Stomatitis	3	
Disease of the spleen	1	
Fistula in ano	2	
Abscess of rectum	2	
Inguinal hernia	7	
Prolapsus ani	2	
Hemorrhage from the stomach	6	
Hemorrhage from the bowels	1	
Inflammation of the tonsils	81	
Inflammation of the stomach	21	1
Inflammation of the bowels	29	2
Intussusception	1	1
Inflammation of the liver	50	
Jaundice	3	
Piles	17	
Other diseases of this order	4	1
Total	419	6

Order 7.—Diseases of the Urinary and Genital Organs.

Calculus	1	
Diabetes	1	
Hydrocele	4	
Dropsy from renal disease	4	1
Stricture	1	
Spermatorrhœa	2	
Diseases of the testis	3	
Inflammation of the kidneys	23	2
Inflammation of the bladder	16	
Total	55	3

Order 8.—Diseases of the Bones and Joints.

Coxalgia	3
Inflammation of joints	23
Inflammation of periosteum	4
Necrosis	5
Total	35

Order 9.—Diseases of the Integumentary System.

Abscess	48
Boil	6
Carbuncle	1
Ulcers	22
Malignant pustule	
Whitlow	7
Skin diseases	78
Total	164

CLASS V.—VIOLENT DISEASES AND DEATHS.

Order 1.—WOUNDS, INJURIES, AND ACCIDENTS.

	Cases.	Deaths.
Burns and scalds	1	
Contusions	28	
Concussion of the brain	4	
Sprains	8	
Dislocations	14	
Simple fractures	22	
Compound fractures	13	
Gunshot wounds	6	
Incised wounds	12	
Lacerated wounds	19	
Punctured wounds	6	
Poisoning	7	
Septicæmia	2	1
Old age	1	1
Total	143	2

CLASS VI.—DISEASES OF WOMEN.

	Cases.	Deaths.
Puerperal fever	22	7
Menorrhagia	33	
Dysmenorrhœa	32	
Prolapsus uteri	26	
Leucorrhœa	29	
Hysteria	16	
Uterine phlebitis	1	
Pelvic cellulitis	4	
Ephemera	1	
Vaginitis	5	
Eclampsia	4	
Cervical endometritis	14	
Ovaritis	1	
Heart clot	1	1
Ovarian tumor	1	1
Uterine polypus	1	
Mastitis	16	
Total	207	9

The above table, taken principally from cases coming under my own observation, will serve to show to some slight extent, the prevailing diseases as occurring in Omaha, Nebraska.

DISEASES OF MINNESOTA AND THE NORTHWEST.

By D. W. HAND,
OF ST. PAUL.

The dry bracing atmosphere of this region has given to it a reputation for healthfulness that has drawn here thousands of invalids. That the air has the properties attributed to it, to a considerable extent, is shown by the rapid improvement, and often permanent recovery, of large numbers of these invalids.

Frequent tests, applied by a number of careful observers, show our atmosphere to be very rich in ozone; and the U. S. meteorological reports indicate a small amount of moisture, as compared with eastern and southern stations.

That there is a peculiarity about the air of this section of the country is also plainly evident to our senses. The exhilarating qualities of it are constantly noticed by all persons recently arrived; and its dryness is shown by the almost total absence of moss from the roofs of houses and from trees, and by the fact that polished steel instruments, etc., can be laid carelessly away for years without fear of rusting.

Of those coming here for health, *consumptives* form much the larger class.

It has been found that invalids with tubercles just forming, and having obstructed respiration from that cause, or having a plastic effusion the result of pleuro-pneumonia, are very often permanently relieved. It has also appeared that those having a tendency to hæmoptysis were more certainly benefited than any other class. Even with pulmonic suffering already begun, and having small cavities in one or both lungs, many persons have recovered after coming here; but they have been compelled to become permanent residents. A return to the east or south has generally been followed by relapse and death.

Cases of *Phthisis Pulmonalis*, however, do occur among our resident population; and within the last few years too many native-

born Minnesotans, between the ages of fifteen and twenty-five, have died of phthisis, for us any longer to claim exemption from that disease.

Persons with *Bronchial* affections are not generally benefited by a residence here, the frequent recurrence of epidemic influenza seeming to aggravate the catarrh; yet it is frequently noticed that an attack of influenza does not appear to retard the recovery, or to seriously injure a case of phthisis. It is noticed, however, that among patients coming here with phthisis, chronic, nasal, and aural catarrh are very common, and that very many of them have rupture of the membrana tympani on one or both sides.

Asthma is not common in this region, and, as a general thing, asthmatics coming here from other parts of the country are greatly benefited. Cases of this kind usually demand a dry atmosphere, and when this climate fails to relieve them, we send them with much confidence to the still drier region of Colorado.

Epidemic Catarrh or *Influenza* is the most common disease of the Northwest. It prevails at all seasons of the year, but is most likely to appear in the late autumn and winter, and its influence modifies to some extent nearly every other disease. The U. S. A. Medical Reports from Fort Snelling, Minn., mention a severe epidemic of this disease as far back as 1839; and that the Indians about Minnesota were affected seriously by it. Since that time repeated mention has been made of it, and there can be no doubt that it has for many years affected the Indian tribes of this region. For this reason, if no other, we may conclude that the cause exists in the atmosphere, and not in our peculiar habits of life; our residence in close rooms heated by hot air stoves, or furnaces, etc.

For the last eight years it is certain epidemic catarrh has prevailed more or less every year; and while rarely very serious in its results, it has been a cause of great discomfort.

It begins usually with a decided fever and aching all over the body, very like rheumatism. The head aches violently, especially in the back part, and the throat soon becomes painful and stiff. The nose runs freely, and there is a tendency to perspire even while the pulse keeps frequent. The feeling of weakness and general distress is remarkable in all cases.

Thus established, the disease will continue from four to ten days, and passing off will leave the patient with nuralgic pains in the face and throat, or over the whole body; a feeling of aching or "being tired" in the throat often remaining for several weeks.

The termination is, however, not always so favorable. The complications arising are numerous. In some epidemics there will be a special tendency to acute tonsillitis; in others, to ulcerated sore throat; in others still, diphtheritic symptoms will appear most prominent. Toward the latter part of winter, prolonged attacks of influenza frequently result in bronchitis, pneumonia, pleurisy, or internal aural catarrh. *Acute bronchitis*, while not very frequent, is sometimes rapidly fatal. It is thought to occur oftener among children than with adults. *Chronic bronchitis*, as the sequel of an attack of influenza, in quite common and is difficult to relieve.

Pneumonia, which is here rarely developed as the direct result of exposure, frequently follows influenza. This form is generally manageable; it requires a supporting treatment, and will nearly always get well in about eight days.

When pneumonia does appear as the result of a sudden chilling of the body after being over-heated, it is not only severe, but frequently fatal. Many of these cases it is believed would be saved by a more free use of the lancet.

Pleurisy is rarely separated from pneumonia; and, as it is modified or not by the influence of influenza, so must generally be the decision as to its treatment; active, if it is idiopathic, but carefully supporting if the result of influenza.

Acute internal aural Catarrh is one of the most painful consequences of influenza, and during some epidemics it is not infrequent. Puncture of the membrana tympani has been necessary in some cases, and has been followed by immense relief.

As another consequence of this epidemic influenza, we have as a very common affection *chronic nasal catarrh*. This is no doubt aggravated by the sudden and extreme changes of temperature to which we are so often subjected in winter, by going in or out of our close, heated houses, but its foundation is generally laid by an attack of influenza.

Ophthalmia is quite common, generally of the catarrhal form, and disappearing under proper care in a few days, but where neglected, usually resulting in granular conjunctivitis. Purulent ophthalmia is not often severe; and cases where any serious injury to the eyes has resulted from snow blindness or from exposure to storms on the prairie are comparatively rare.

The Indians in this region are greatly troubled with chronic conjunctivitis and other affections of the eyes; the result, it is

generally thought, of their careless habits, exposure to smoke in their wigwams, etc.

Rheumatism in some form is, next to influenza, our most common ailment. It is peculiar in its attacks, being generally mild, and affecting in a subacute way nearly every tissue of the body. Few persons escape having, at some time or other, the muscular twinges or aching joints, or exceedingly sensitive skin, which so often indicates rheumatism; yet in the *acute* form, rheumatism is comparatively rare. We do not often have deposits in the joints, contractions of the limbs, or other deformities resulting from it; yet even from the mildest cases, we frequently get cardiac troubles. Especially is this the case with children. In them also we often find nephritic disease, albuminuria, etc., resulting from mild attacks of rheumatism. The disease is very often confined entirely to the muscles, or the fascia covering them, and not unfrequently it has resulted in suppuration.

Neuralgia comes next to rheumatism in point of frequency. It is often severe and persistent, and is not confined to any particular season of the year. It appears nearly as often in hot weather as in cold; while rheumatism is mainly confined to winter and spring.

Chorea, which is not uncommon here, and which is both severe and obstinate, has not been observed to follow acute rheumatism, yet it is very often accompanied or preceded by rheumatic or neuralgic pains.

Hysteria is also very common with the young who have suffered much from rheumatism or neuralgia; otherwise it is not often seen.

Over a large portion of Minnesota and Northern Wisconsin, *malarial fevers, i. e. intermittent* and *remittent*, are unknown; but they do prevail to a limited extent along the banks of the Mississippi River, as far up as Lake Pepin; and after unusually hot dry weather, even to the Falls of St. Anthony. When occurring, the intermittent is usually of the quotidian form, and not very obstinate. The remittent is mild in form, and yields readily to quinine. Cases of *congestive fever* are more rare.

What we do most commonly see, in the latter part of summer and fall, in this region, is a *continued fever* of about three weeks' duration. This fever varies in type with different seasons, having at times decided remissions, violent head symptoms, bleeding at the nose, etc., and is called *typho-malarial fever*. At other times,

the cases will have prominent enteric symptoms from the beginning, and they are called *typhoid fever.*

Typho-malarial fever in some years, as in 1871 and 1872, has prevailed as a wide-spread epidemic in the early fall, and has overshadowed all other diseases; yet when cold weather sets in, it has been merged into an epidemic of typhoid fever. An epidemic of this character prevailed extensively, last year, in the valley of the Red River of the North. That it is not an ordinary remittent fever, is proved by its being unchanged by the use of quinine; by its running a definite course, of about three weeks; and by its epidemic influence, being so frequently turned into typhoid. This fever requires little treatment, and its cases nearly always recover.

Typhoid fever is more or less prevalent every fall and winter, and local epidemics are frequently reported. It is more common, and more severe in the country than in the larger towns, and it causes a large percentage of the deaths reported every year. So many cases however recover, even when the enteric symptoms are violent, that we are justified in pronouncing it comparatively manageable. As many cases frequently occur in a family or neighborhood, and follow each other with painful precision, the belief naturally prevails, even among many of our physicians, that typhoid fever is contagious.

It seems certain, however, that this is not true. So many exposed young persons escape, who, by a subsequent attack of the disease, show themselves susceptible to the typhoid fever poison; and so rare is it, that any particular case is even suspected of bringing the disease into a neighborhood.

The disease is no more contagious than epidemic dysentery, or yellow fever; and, like them, its cause is in the atmosphere, a miasmatic poison, generated by local influences, of which we know little or nothing.

The treatment is mainly supporting, with enforced rest in bed, and warm applications over the abdomen.

Considering the comparative immunity of this region from malarial poison, the number of cases of hepatic disease is remarkable. In the late autumn, epidemics of *jaundice*, or of the peculiar morbid condition of that symptom, are not unusual; and it is quite a common thing to see organic disease of the liver. Jaundice occurring in pregnant women, is here frequently followed by premature labor and death.

Exanthematous diseases have with us no special significance.

They probably differ in no way from the same diseases elsewhere. As a rule, *scarlet fever* and *measles* are very mild; but occasionally an epidemic will appear of a very violent form, and many cases will result in death. *Smallpox* is often severe in form, but is rarely fatal.

The same may be said of *erysipelas*, which prevails to a considerable extent toward the latter part of nearly every winter.

About the same time of year, and apparently induced by the tendency to erysipelas, we occasionally see cases of *puerperal peritonitis*. It can scarcely be said, however, that this latter disease has ever prevailed here in an epidemic form. General peritonitis occurring in puerperal women is nearly always fatal. Pelvic peritonitis, which is not uncommon, generally ends in suppuration, the patient making a good recovery.

In non-pregnant women, *uterine inflammations* and *displacements* are quite common, but probably not more so than in other parts of the country. *Cancer* of the uterus is frequently seen, and considering the rarity of malignant disease in other parts of the body, it is all the more noticeable.

Diphtheria has been for twenty years an occasional visitor to this region; the different epidemics of it varying greatly in their character; at one time being very mild, and at others severe and rapidly fatal. It is most likely to appear in the fall and winter; is confined to no particular locality; or any peculiar class of people; yet most of the physicians seeing diphtheria, argue that it occurs most frequently among those who are not careful about cleanliness. It is decidedly contagious, the disease being carried from house to house by persons exposed.

The past fall and winter diphtheria has been confined mainly to the region about and above the Falls of St. Anthony; many fatal cases occurring at Minneapolis, Anoka, and St. Cloud, while at St. Paul and below, it has scarcely prevailed as an epidemic at all.

Under a mildly stimulating treatment, preceded if possible by the local application of nitrate of silver, either the solid stick or a strong solution, most patients with diphtheria will recover. Should the larynx, however, become invaded, the case is hopeless. The patient, it is true, may possibly recover, but no remedy now known is at all certain to aid in bringing about that result.

About the breaking up of winter, *catarrhal* or *spasmodic croup* is frequent among children, but yields readily to treatment.

Membranous croup, also, not unfrequently appears about the same time of year, and it is nearly always fatal. The treatment

laid down by the books is useless, and the administration of *turpeth mineral*, which has been so highly recommended, has seemed only to produce a prostration which has hastened death. Tracheotomy in an ordinary private house in this region offers small chance for success.

Cerebro-spinal meningitis has prevailed at several different periods in the Northwest during the last sixteen years; sometimes being confined to special districts, but generally affecting, to a greater or less extent, wide areas. At such times its peculiar epidemic influence, like that of diphtheria, has changed and aggravated nearly every other form of disease.

It has always appeared in the early spring, and generally has disappeared with the first warm weather. Children have been most affected by it, and males apparently oftener than females.

The invasion has generally been rapid; a sudden and alarming loss of strength, patient feeling tired, with headache, sighing respiration, and an irregular pulse. Vomiting usually, and great thirst; soon followed by sore throat, swelling of face, and stiffness of neck. Delirium nearly always present, and often a semi-comatose condition.

The disease is often several weeks in duration. With us it has been very fatal, yet many cases recover under a stimulating treatment. It has been noticed that the pretty free use of opium is almost always necessary, and that it it beneficial in the end.

The deafness which always accompanies this disease has too often remained after recovery; and it is believed that this is the great cause of so large an increase of our deaf-mute population. The applications for admission to the deaf and dumb asylums are much more frequent than the natural increase of population would account for.

It is not known that any case of *hydrophobia* has ever occurred in Minnesota; and the occurrence of *rabies* among the dogs and wild animals, which has been so common the past five years on the plains of Kansas and Nebraska, has never been known in this region.

Traumatic tetanus occurs occasionally, and is always fatal.

Although the heat in the middle of a summer day is intense, *sun-stroke* rarely occurs, and when it does, is readily relieved. It here always occurs in the daytime.

During the warm months *diarrhœa* and *dysentery* prevail to a considerable extent. They are usually of a mild form and easily

controlled. *Epidemic dysentery* appears only at rare intervals, but is occasionally quite severe. It is, however, not often a cause of death.

Epidemic cholera has never prevailed in this State. Sporadic cases of genuine cholera have been known to occur; and each time that cholera has been epidemic in St. Louis, a number of cases of that disease have been landed at the different river towns, by passing boats, yet in very few instances has it exhibited any tendency to spread, and then only to a limited extent. So far as this region is concerned, the evidence is altogether against the contagiousness of cholera.

The *summer complaints* of *children* are among the most certain diseases we see. They vary in type each year, sometimes being *gastro-enteritic*, or simple *enteritic;* another time *entero-colitic;* or too often *cholera infantum.*

Beginning after the latter part of June, and nearly always by the middle of July, these diseases prostrate large numbers of infants and small children; and very often they prove fatal. It has been noticed that when we have hot days, with cool nights, the children are most affected; and some of our best physicians think hot dry weather most likely to produce these diseases, yet, it is certain, some of our worst epidemics have appeared when frequent showers made the season delightful.

The children in the larger towns seem no more liable than those in the open country, and it is true that infants having good surroundings and intelligent care are nearly as often affected as any others. It is also true that at times a change of residence will do wonders toward the cure. A change of location often, from the town to the country, or from a close valley to the open prairie, will revive the most hopeless case, without material change in diet or treatment.

During some warm seasons there will be no genuine cases of cholera infantum, and only very slight gastric or enteric troubles; but nearly every summer, we see more or less nursing and teething infants, between the ages of eight and twenty months, die of what appears true cholera. An infant apparently well at bedtime, will rouse its parents in the night by its restlessness and vomiting. It will appear very hungry, taking milk or water with avidity, and almost immediately ejecting it; watery passages will come from the bowels. The babe will seem in pain, and have a scared look. Nothing will quiet it, but, throwing itself from side to side, it will

cry out sharply, and gradually grow weaker. In about twelve hours the eyes will be sunken, the fontanelles depressed, and all hope gone. Without regard to care or condition the child is struck as by a blow, and no treatment yet recommended will avail to prevent a fatal termination.

Diseases of the *urinary organs* are not very common with us, and they are rarely a cause of death, yet two of the most formidable of those troubles are met with so often, it is deemed necessary to mention them. They are *renal calculi* and *albuminuria.*

Whether from the general use of limestone water or from some other cause, calculi very often form in the kidneys, and attacks of renal colic generally follow. It is remarkable how few of those small calculi are retained in the bladder long enough to cause serious trouble.

Stone in the bladder is rarely seen.

Acute albuminuria as a sequel of scarlatina, measles, rheumatism, or syphilis; or resulting from exposure to a cold rain, or too long continued chilling of the feet, is frequently seen; and too often being neglected it becomes chronic. Even when chronic in its character, it is found that judicious treatment will long keep the patient in comparative comfort. Many physicians in this region are now satisfied that the water from the springs at Wakesha, Wisconsin. is of decided advantage in the treatment of this disease.

Skin diseases are oftener seen, and many of them are very obstinate. They are much more troublesome in winter than in summer.

The diseases mentioned above embrace about all that are seen with any frequency in this region.

The climate acts beneficially, no doubt, in the cure of all depressing morbid conditions, and this is especially noticeable in the excellent recoveries from *syphilis, frost-bite,* etc. It is certain, also, that it greatly aids recovery after wounds and surgical operations. On the other hand, it often over-stimulates the active thinker or worker of this section, and leads him to indiscretions which speedily tell on the brain; resulting often in cerebral hyperæmia, nervous dyspepsia, partial paralysis, etc.

April 30, 1875.

PARTIAL REPORT OF COMMITTEE ON VENTILATION.

LANSING, May 1, 1875.

H. I. BOWDITCH, M.D.,

Chairman of Section on State Medicine and Public Hygiene.

SIR: I regret to inform you that, as Chairman of Committee on Ventilation, I have not been able to prepare any report. My time has been so occupied with work for our State Board of Health, that I have found it impossible to perform work in other fields. I exceedingly regret this, for I am deeply interested in the effort to improve the sanitary condition of our public schools.

Drs. Stuart and O'Sullivan have contributed valuable articles, which I inclose to you, to be presented to the Section.

Very respectfully,

R. C. KEDZIE,

Chairman of Committee on Ventilation.

WINONA, MINN., April 7, 1875.

DEAR SIR: Shortly after receiving information of my appointment as a member of the Committee on Ventilation, of which you are chairman, I sent circulars to various persons in this State, whom I had reason to believe were giving attention to the subject of ventilation, and a few of whom, with myself, were experimenting in that direction. Among the latter is Dr. Hewitt, Secretary of the State Board of Health. One of his letters, pertaining more to the subject of ventilating school buildings than dwellings, I herewith inclose for your consideration; it now being *too late* for me to assist you in the report, were you to assign me any portion of the subject to work up.

Yours truly,

A. B. STUART.

MINNESOTA STATE BOARD OF HEALTH,
CHAS. N. HEWITT, M.D., *Secretary*.
RED WING, MINN., July 1, 1874.

DR. A. B. STUART, *Winona*.

DEAR DOCTOR: Your card of some days ago was duly received, and I have since been rather at a loss how to answer it. The inquiry covers the whole subject of ventilation and warming, and to answer fully, would require a treatise, and a bulky one too. I understand though, that you want a statement of the Principles of Ventilation, and even that would be a statement longer than you have the patience to read, had I the time to write it.

The air of inhabited buildings ought to be maintained as near the purity of the "open air" *as possible*, for to do it *perfectly* is *practically* impossible. Pettenkoffer, the great German authority, takes as the limit of permissible impurity in dwellings 1 part of carbonic acid in 1000 parts of air. Parkes, the English authority, takes (0.6) six-tenths of one part in 1000. The "open air" contains (.4) four-tenths in 1000, or four parts in 10,000. To maintain Pettenkoffer's standard, 1000 cubic feet of fresh air must be supplied for every person per hour; for Parkes's standard, 3000 cubic feet fresh air per hour, per head; .7, .8, or .9 would require, respectively, 2000, 1300, and 1200, per hour of fresh air per head.

In schools, if we could keep the limit at 8 per cent. [.8 part?] carbonic acid per 1000 parts of air, that is, furnish 1500 cubic feet of fresh air per hour to each person, we would do just about the right thing.

Take an example. A school-room contains 39 pupils and one teacher, = 40 persons; to maintain our standard, *i. e.* limit CO_2 to .8 in 1000 feet of the air, we shall require 1500 feet fresh air per head, and 40 times that for the school per hour, = 60,000 cubic feet. This amount will be required every one of the school hours *summer* and *winter*. In *winter* that amount should pass *through* the air chamber of the furnace every hour *into* the room, and through the ventilators *out* of the room in the same time. To pass this amount of air through a room without perceptible draught, the capacity of the room should be equal to at least 500 cubic feet of space to each individual; that would require a room about $40 \times 40 \times 14$ feet, and the air of the room would be changed about three times an hour, which at a temperature of 70° F. could be done without perceptible draught. The heated air should come into the room in its coolest parts, and the ventilating flues should take the foul air from the floor level. I should prefer that

they should be small *and under each desk*, all centring at last in the main ventilating shaft, which should be heated by the pipe for the furnace smoke, going up through its centre. The capacity of the shaft should be equal to the delivery (in this case) of 60,000 cubic feet of air per hour.

For heating purposes, hot water pipes in the furnace chamber would be best if we had a suitable arrangement, but as we have not, the wrought iron furnace is, as far as I know, now the best, *provided* that the air supply is so abundant that it has no risk of being over-heated before reaching the inhabited room. Ventilation of school-rooms is almost if not quite as necessary in summer as in winter, and in them ought to be a small stove in the base of the ventilating shaft to create a draft, when the furnace is not in operation.

If I have not answered what you wished, write again.

Yours truly,

CHAS. N. HEWITT.

VENTILATION.—It is of supreme importance that perfect ventilation should be secured for all school-buildings. The first thought of the architect who plans a school-house should be, how he may best solve this great problem of ventilation. The ambition to have our school-buildings present as imposing an appearance, *streetwards*, as possible, and the desire of erecting them in conspicuous sites, have, too generally, been the paramount considerations in the minds of trustees and others charged with the locating and building of such structures. The result has been neglect of other considerations of far greater urgency. It is to very little purpose that your school-building is, architecturally, an ornament of the locality in which it stands, if the proximity of lofty buildings all around it shuts out light and air from the class-rooms, or from the play-ground; or if the latter is simply a damp, dark, unwholesome pit filled with stagnant air. Better far, that the pupil should have to walk some little distance to school, than that a school-house in a central location should, of necessity, be unprovided with the means of healthful recreation, viz., free space, air, and sunlight.

A defect in the construction of our public school-houses is, that too much space is allowed to the assembling rooms at the expense of the class-rooms, where it is most needed. This defect is very obvious in primary departments, where the average attendance is

usually double that of the grammar departments. This necessarily causes deficiency in class-rooms in the schools of the city of New York, where the children in the gallery classes are admitted from four to six years of age. In these class-rooms the attendance is usually from 150 to 200. Unless this overcrowding is prohibited by law, and the air space necessary for health allowed to each pupil, no mechanical contrivances that can be devised for the improvement of ventilation of school-buildings will ever prove effectual. From an official report made to the present New York City Board of Education, published in January, 1875, the following extract is taken, merely to show the unsanitary condition of the schools, not vouching for its scientific accuracy: "Too little regard has been had to the space which should be allotted to each pupil in the construction of the school-buildings, with a view to both comfort and ventilation. In many class-rooms of the primary departments and schools, only about thirty cubic feet of air to each pupil are possible to be given, even with all the windows and doors open. In some recitation-rooms, only forty or fifty cubic feet are afforded. The sole consideration in furnishing the school-rooms seems to have been in these cases, to crowd as many seats together as possible. Serious maladies are frequently contracted by the pupils in these schools, because of the necessity of opening the windows even in the coolest weather. There should be, in all grades of pupils, a uniformity of treatment, mental, physical, and moral; but the fact exists that the pupils of grammar schools are furnished in nearly all the school-buildings from one hundred to one hundred and fifty cubic feet of air per pupil."

It would appear from this that the maximum of air-space for each pupil, according to the school authorities, is one hundred and fifty cubic feet; whereas, all sanitary authorities agree that three hundred cubic feet is the least amount compatible with health. The following abstract of the report on the unsanitary condition of the public schools of the city of New York, was made to the Board of Health by two of its inspectors, Drs. Viel and Post, February 4th, 1873. This report was presented and in print before I had an opportunity to review it. It is a fair statement of the condition of the schools as we had observed them; there may be some slight inaccuracy in the figures, which is no doubt typographical. I then had the sanitary supervision of schools but a few months, during which time I was busily engaged in the inspection of the schools and the supervision of the vaccination of the pupils, of whom up-

wards of 40,000 were vaccinated without a death occurring from smallpox:—

"E. H. JAMES, M.D., City Sanitary Inspector: Sir: Having completed the sanitary inspection of all the public school buildings, and forwarded such complaints upon each as we deem necessary, we submit the following report of the general sanitary defects in regard to ventilation, over-crowded class-rooms, faulty construction of water-closets and urinals, deficient water supply, defective drainage, and general filthy condition of the interior of the buildings. In the following views and recommendations, we are sustained by Dr. O'Sullivan, Physician to the Board of Education, in connection with whom our inspections have been made: In our opinion, not one of the numerous school edifices has proper and adequate means for thorough and perfect ventilation. While very many have ventilating flues constructed in the walls for the purpose of ventilation, yet not one that we inspected appeared to be of any practical benefit, owing either to obstruction of the flues or the want of a revolving turret on the top of the wall to produce a continuous current of air. It is apparent to the most casual observer that without heat or some mechanical appliance it is impossible to create or maintain a current of air through a flue constructed in the walls of a building. Where flues are already placed in the walls, we have recommended two openings, one ten inches from the ceiling, the other ten inches from the floor, with a revolving turret placed upon the top of the outer wall, to produce a cross current of air through the class-room, thus facilitating the egress of foul and impure air and the ingress of fresh air. It is the invariable and pernicious practice, whenever the class-rooms become overheated or the air becomes impure and offensive, to open the windows from the top, thus allowing a current of cold air to rush in upon the heads of the children, producing catarrhal and bronchial affections, without any perceptible benefit or apparent change in the impurity of the rooms.

"In the class-rooms, where proper flues are not placed in the walls, we have recommended the adoption of rotating ventilators, to be placed in the windows, which will establish a continuous cross current of air without creating a draught or causing any of the unpleasant consequences resulting from the present method of ventilating by the opening of the windows. It is of paramount importance that some prompt and decisive measures be adopted whereby the class-rooms may be provided with proper ventilation,

and, in very many of the lower or ground floor rooms, with sufficiency of light. Some of these ground floor class-rooms without any sub-cellar, and where the rays of the sun never enter, we have recommended should be vacated as totally unfit for occupation. One of these basement rooms, with over one hundred children, has only one window, and that opens into a space only eight feet in width between the school building and a three-story brick building in rear.

"The over-crowding of many of the class-rooms in the primary schools can best be illustrated by giving the capacity of a few of the rooms, with the number of children occupying them :—

4410	feet	cubic	space.	75	children.	60 feet	per child.
3780	"	"		67	"	56 "	"
4320	"	"		80	"	54 "	"
3800	"	"		85	"	40 "	"
6480	"	"		130	"	50 "	"

"In almost every instance the privies and urinals are situated either within the school buildings or in the yards adjacent, in such proximity to the class-rooms that offensive odors from the same readily find access to the interior of the rooms. Again, the floors and walls of the urinals are constructed of wood, and soon become saturated with urine by reason of soakage, and constantly emit foul odors. We have in most instances, recommended that the floors and walls of the urinals be covered with metal or some other substance which is impervious to water.

"In the case of the privies we have recommended ventilating flues to extend to at least two feet above the top of the school building.

"Very few of the slop sinks in the schools are provided with proper traps, and offensive sewer gases escape into the class-rooms by reason of this defect. In a large number of schools, the only water supply is on the ground floor. Although the water pipes extend even to the top floor, this absence of water from the upper rooms is a serious inconvenience to both teachers and scholars."

The then Board of Education received the reports favorably, and were engaged in devising means to put the schools in thorough sanitary condition. Immediately after, the legislature made a new charter for the city, by which the members of the Board of Education were changed throughout. The duty of making the improvements suggested, devolved upon the new Board, which was organized April 12th, 1873, but which took no action whatever on

the report, and abolished the office of Medical Inspector, for political purposes, though admitting that the office had been useful and well served. At the first meeting of this Board, the Presidents of the principal medical associations and other prominent physicians sent a communication requesting the Board of Education to continue the office of Sanitary Superintendent in the interest of School Sanitation.

Notwithstanding the sanitary defects in the school-houses referred to, medical inspection largely contributed to the protection of the health of the children; in the isolation of the sick, the reduction of overcrowded class-rooms, frequent recess during school hours, and other incidental sanitary measures, unnecessary here to allude to. An eminent citizen and school officer of twenty-five years' standing had stated, in a letter recommending medical inspection, that the medical officer had accomplished more in a sanitary sense than had been done during his long service. In this connection, I refer to a Report to the Massachusetts Board of Health on "School Hygiene." The author of the report, Dr. Frederic Winsor, says:—

"Every city should have a sanitary inspector and instructor of schools, who should be a physician. Of sanitary matters, physicians are confessedly the best judges; their professional interest and enthusiasm would lead them to undertake labors in such a cause, which could not be expected from men of other occupations, while their acquaintance with the amount and nature of disease prevailing from month to month would both furnish and obtain valuable illustration in connection with their official school inspections. By their *reports*, public attention would be drawn to whatever mistakes and evils of this order might be shown to exist, and when this great point can be gained, the evils will certainly be abated."

In a large proportion of the churches of the city of New York there exists defective ventilation. In those churches that are largely attended at the morning service on Sunday, this defect is very noticeable, especially in the winter season, when the windows are shut. The oppressive atmosphere of the church is surcharged with carbonic acid gas; decaying organic matter, and moisture from the respiration and perspiration of those present. The only means of ventilation at any season, is, by opening a window, and this is only available when the weather is fine. After a brief period, the irritation of the mucous membrane of the air passages is

very apparent, keeping up a chorus of coughing indicative of the irritating effects of poisoned air. In the construction and management of these buildings, the commonest dictates of sanitary prudence are disregarded.

An instance of the palpable ignorance of sanitary laws of those in charge of our churches is apparent where the church is situated on the corner of streets or opposite open squares. The upper windows in many of them are hermetically closed, even in summer: the air in the galleries is so oppressive that, in large congregations, persons are not unfrequently taken out fainting. This I have myself witnessed on many occasions. In my immediate vicinity, there is a church such as I have referred to. During the past winter in the severest weather, I have seen persons worship with a temperature below zero, to the imminent danger of their lives. It is not surprising that pneumonia and catarrhal affections have been so prevalent and fatal during the past winter, owing to such reckless disregard of public health.

The construction of court-houses, prisons, and hospitals, furnishes abundant evidence of the deleterious effects of defective ventilation. The court-house in a neighboring city, where the celebrated case of Tilton and Beecher is now being tried, will serve as an illustration. This will apply to a large majority of court-houses in the populous towns and cities in this and contiguous States. The room where the court is held is in an angle of the main building in an apartment capable of thorough ventilation by the simplest contrivance, if the architect had given the least attention to it. The only means of light and ventilation are two narrow windows in the side walls, these, when open, expose the densely packed audience to catarrhal affections. In some instances, dangerous cases of illness have ensued. When the windows are closed, the air is so vitiated that those who are compelled to breathe it very soon manifest evidence of its poisoning effect. Frequent cases of sickness among counsel and members of the press are reported to have occurred; indeed, as I write, a reporter of one of the city papers is in a critical condition, his illness being attributed to this cause.

Another source of disease is the escape of sewer-gas. At a public school in Nassau, N. H., the escape of this gas caused a large number of cases of illness from diphtheria and other diseases among the pupils. The alleged cause was owing to the janitor using saw-dust instead of earth in the closets. This, I apprehend, is a common practice in several of our educational institutions

during the winter season, and has, I doubt not, contributed to induce the epidemics in various parts of the country, which have been attributed to other causes. The escape of sewer-gas and other deleterious gases in and about our colleges, it is now ascertained beyond any reasonable doubt, is a predisposing cause of phthisis. Several instances are also reported where epidemics have occurred from this cause. One of these colleges is, or was up to a recent period, closed from such a cause; the students being ordered home by the physicians who made an examination of the premises. In two other colleges in the same State (New Jersey) epidemics have broken out. In this report I have confined myself to a general review of the unsanitary condition of schools, feeling assured that the chairman of the committee and our colleague, Dr. Stuart, will do ample justice to that portion of the report which refers to the construction of buildings, warming, etc.

R. J. O'SULLIVAN.

CLIMATOLOGICAL AND SANITARY REPORT OF FLORIDA.

By JOHN P. WALL,
OF TAMPA.

Historical Sketch.—From the earliest discovery of Florida in 1497, by Sebastian Cabot, five years after the first voyage of Columbus, up to the present time, she has ever and anon been the object of considerable interest. As early as 1512, Ponce de Leon landed on her shores in search of health, hoping to find in her glades or forests the rejuvenating fountains of "eternal youth.' Other Spanish expeditions, for the conquest of Florida, followed, the most noted of which was that under Hernando De Soto in 1539. This bold and chivalric adventurer, with a thousand mail-clad followers, landed at Tampa Bay (*San Espiritu*), and amid the hardships and dangers of penetrating and traversing an unexplored country, inhabited by barbarous and hostile savages, made his way northward beyond the present confines of the State, and thence pursued a westward route to the Mississippi, where his own restless career and that of his ill-starred expedition terminated. His failure to find among the natives the precious metals in abundance, as his compatriots, Pizarro and Cortez, had done in Peru and Mexico, cooled the ardor of the avaricious Spaniards for conquest and domination in the vast territory then claimed as Florida.

The first permanent settlement was made in the sixteenth century, by some French Huguenots, on and near the mouth of the St. John's River. In a few years they were massacred as heretics and foreigners. A similar fate soon overtook the perpetrators of this barbarous deed. In 1565, the Spanish Governor, Menendez, founded St. Augustine; and consequently for antiquity its claims to priority over every other place in the United States are conceded. From this time, Florida became a petty colony of Spain, only attracting a little attention now and then during the continental wars of Europe. From 1713 to 1784, Florida was a British possession,

during which an Englishman, named Turnbull, planted a colony of Minorcans at New Smyrna; but on the recession to Spain, the colony was broken up. In 1819 Spain ceded Florida to the United States, and in 1821 the latter took formal possession.

During all the time of nearly three centuries of Spanish claim and possession, but a few small settlements had been made along the coast, the principal of which was Pensacola. With the decadence of the Spanish power in Europe that of the colonies kept pace, and no efforts appear to have been made either to possess and cultivate the soil or to civilize the aborigines. On the other hand, it seems that her Indian population received some considerable accessions from those of Georgia and Alabama, so that when Florida was ceded to the United States, it is estimated that there were not exceeding six hundred whites in the territory, while occupied by a tolerably dense Indian population throughout. The number of refugee Indians was so great and preponderating, as to attach the name Seminole (*meaning refugee, or runaway*) to the whole of the Florida Indians.

It is highly probable that the Spaniards made some efforts to establish a settlement in the extreme southern part of the peninsula as being nearest and most accessible to Cuba. And there are strong probabilities that they projected and undertook to drain Lake Okechobee, as various completed sections of a canal from the Lake to the Caloosahatchie River are still to be seen. In relation to this there is a legend that they had a penal establishment on an island on the lake, and that it was with convict labor that this effort to drain the lake was made.

In 1845, Florida was admitted into the Union, and thence on, her political history has been that of the other States, and particularly those of the South. From her cession to the United States to within two years of her secession, Florida was the theatre of almost continuous hostilities between the General Government and the Seminole Indians. The latter were easily driven into the peninsula, but here, with Spartan courage and Roman firmness, they resisted alternate coercion and persuasion to go west, and a feeble remnant still remains, evincing the instinctive love of country even in the savage breast. The presence of so large a tribe of Indians, together with their frequent and protracted hostilities, retarded the settlement of the peninsula for nearly forty years. Since the war, the State has attracted considerable attention on account of the mildness of its winter climate, and fruit-growing. But, so far, the

eastern part, because of its greater accessibility, has been the only portion much visited or settled. The whole State is generally judged in both soil and climate by what the tourist experiences and sees along the St. John's, and thus he fails to arrive at anything like a correct estimate of these two important features of the State.

CLIMATOLOGY.—Florida extends from the 25° to the 31° north latitude, and lies within 80° and 88° west longitude from Greenwich; thus comprising about six degrees of latitude, and nearly eight degrees of longitude. The State has been likened in shape to a boot, the peninsula constituting the leg, and the continental portion the foot, with the toe to the west. She contains 59,868 square miles, making her territory a little more extensive than Georgia, the "Empire State of the South." The census of 1870 gives her population at 187,748, nearly equally between whites and negroes—the former being a few thousand in the majority. The middle and western divisions of the State, except near the coast, are elevated and generally rolling; and this character of the country extends eastward beyond Lake City to the Little St. Mary's River. The country is also elevated and rolling down the middle, and western slope of the peninsula to the 28° of latitude for the latter, and a little further south for the central ridge. From the St. Mary's River on the north, all along the eastern part of the State, the country is low and level beyond the head waters of the St. John's, and thus continues down the peninsula. The entire lower third of the peninsula is low and level, and covered with extensive savannahs, lakes, and everglades. A slightly more elevated ridge near the coast, on each side, is to be found in this latter portion. Florida has no mountains, nor are there any in Georgia and Alabama of sufficient proximity to her borders to exercise any influence on her climate. In comparison with the St. John's, the other rivers wholly within her borders are small; and while the majority, like the St. John's, have their sources in lakes and swamps, others appear to be entirely of subterranean origin. This latter feature is peculiarly characteristic of many short but bold and voluminous rivers along the gulf coast of the peninsula, between the mouth of the Withlachooche and Tampa Bay. Some smaller streams of a similar subterranean origin are to be found on the western side of the St. John's, into which they empty. In the elevated and rolling sections, most of the rain water escapes through subterranean passages found in sink-holes

into which lead one or more large ditch-like ravines with numerous tributaries. The soil is mostly a silicious sand, loose and porous in elevated sections, fine and compact in those low and level. In some localities in Middle and West Florida there is some clay soil.

The absence of parallel geographical and surface conditions, between Florida and countries in the same latitude on the Eastern Continent, occasions greater dissimilarity in climate than might be supposed to exist if only superficially considered. The same thing, likewise, applies to a considerable extent to the climates of the two continents. While the Atlantic States of North America resemble more nearly in winter climate the countries in Eastern Asia than those of Western and Southern Europe, yet there are no exact parallels, and this divergence increases in the lower latitudes; for, although a fall of snow is rare in Canton, yet a parallel phenomenon would be its occurrence in Key West—both places being exactly in the same latitude. The summer temperature is also greater in the United States east of the Rocky Mountains than that in the same latitudes in Europe; and similarity in climates for all seasons is only approximated on the Pacific coast. Nor do the Gulf of Mexico and the Mediterranean afford any parallels as regards the effects of the former on the climate of Florida.

Our consideration of the climate of Florida, then, must be confined to an exposition of such meteorological facts as have been accumulated, with such deductions and inferences as may be legitimately presented. And, in view of the paucity of material within my reach and the importance of the subject, this effort will lead, it is hoped, to a more thorough investigation of the subject by some one with greater abilities and more facilities at command than I possess.

In the first place, it will be observed that Pensacola (Barrancas Barracks) is the only place in Middle and West Florida where meteorological observations have been recorded; and these observations can hardly be taken as fully and fairly representing the interior of these sections whose altitude is much more considerable than that of the coast-line. The situation of Punta Rassa, on the Gulf coast, also, can hardly give a fair criterion of the climatic conditions of the interior of the peninsula. The small size and remote position of the island of Key West, at a considerable distance from the main-land, gives to that station but little importance as bearing on the climate of the State. Under all the circumstances, it is easy

to foresee that this effort must fall far short of both completeness and exactness as representing either the whole State or any of its sections.

The first two of the tables are those of mean temperature and rain-fall for each month, season, and the whole year, as observed at the various military posts in the State for a period of years. The material of the other tables has been supplied by works from the Signal Office for two years, beginning October, 1872, and ending October, 1874. Only for the latter year is the percentage of relative humidity given for each month, etc. My excuse for introducing so many tables is the hope that the presentation of all the meteorological facts as thus tabulated, even only for one year, may not be uninteresting as affording something of an index of the normal climatic conditions of the State.

I.—*Table of Mean Temperature for each Month, Season, and the Year; from observations at various points in Florida for a period of years.*

Station.	Position of Station.			January.	February.	March.	April.	May.	June.	July.	August.	Sept'ber.	October.	Nov'ber.	December.	Spring.	Summer.	Autumn.	Winter.	Year.	No. of Yrs. and Mos.	Date.	Authority.
	Lat.	Long.	Alt.																				
			feet.																				
St. Augustine . .	29°48′	81°35′	20	57 0	59.9	63.3	68.8	73.5	79.3	80.9	80.5	78.6	71.9	64.1	57.2	68.5	80.3	71.5	58.1	69.6	20	1824–1852	Military Post (Fort Marion).
Jacksonville . .	30 15	82 00	14	56.4	56.1	64.2	67.8	76.4	79.4	82.3	82.4	80.7	68.7	64.1	54.2	69.5	81.4	71.2	55.6	69 4	2	1854–1855	Dr. A. S. Baldwin.
Pilatka . . .	29 34	81 48	25	57.2	58 3	64.1	71.2	76.6	80.3	81.2	80 2	78 6	70.5	61.5	56.0	70.6	80.6	70.2	57.2	69.6	6	1838–1843	Military Post.
New Smyrna . .	28 54	81 02	10	62.4	63.7	67.6	73.6	74.2	78.8	79.8	78.8	78.2	72.0	67.2	63.5	71.8	79.1	72.4	63.2	71.6	3	1840–42; 1853	" "
Fort Pierce . .	27 30	80 20	25	62.7	64.4	69.8	73.6	76.9	79.0	82.5	82.4	80.8	75.0	68.5	62.6	73.4	81.3	74.8	63.3	73 2	5–6	1840–41; 1852–55	" "
Fort Dallas . .	25 55	80 20	20	66.4	66.6	70.4	75.6	78.0	80.5	82.1	81.8	79.6	77.9	71 3	66.8	74.7	81.5	76.3	66.6	74.7	4–6	1839–41; 1850–55	" "
Key West . . .	24 32	81 48	10	66.7	68.9	72.9	75.4	79.1	81.6	83.0	82.9	81.9	78.1	74.7	71.0	75.8	82 5	78.2	69.5	76.5	14	1831–38; 1843–55	" "
Fort Myers . .	26 38	81 00	10	63.4	68.0	72.2	73.8	80.1	81 2	82.9	83.1	81.7	77.7	71.5	64.7	75.4	82.4	77.0	65.3	75.0	4	1851–1854	" "
Tampa . . .	28 00	82 28	20	61.5	63.5	67.7	71.8	76.6	79.5	80.7	80.4	78 3	74.0	66.9	62.0	72.1	80.2	73.1	62.3	71.9	25	1825–1854	" "
Fort Meade . .	28 01	82 00	80	58.4	63.2	69.0	69.9	76.7	78.2	79.8	80.0	79.2	73.8	68.5	61.1	71.9	79.3	73.8	60.9	71.5	3–8	May, 1851–1854	" "
Micanopy . . .	29 30	82 28	60	60.5	60.5	67.4	72.0	76.6	79 3	80.0	79.3	77.9	70.5	61.0	56.0	72.0	79.6	69.8	58.9	70.1	4–6	July, 1838–1842	" "
Fort King (Beala) .	29 10	82 10	50	58.5	58.2	64.3	71.4	76.4	79.8	80.8	80.1	78.2	70.6	63.2	58 5	70.7	80.2	70.6	58.4	70.0	6	1832, irreg. 1843	" "
Cedar Keys . .	29 07	83 03	15	55.6	58.3	68.4	68 7	76.9	79.7	81 3	81.4	79.7	72.5	64.3	59.1	71.3	80.8	72.2	57.7	70.2	5	1850–55; ex. 1853	Judge Steel.
Fort Fanning . .	29 35	83 00	50	59.7	58.3	67.0	70.6	75.7	79.1	81.6	82 2	80.4	72.1	60.6	55 0	71.1	81.0	71.1	57.7	70 2	2–3	Oct. 1840–42	Military Post.
Pensacola . . .	30 18	87 27	20	53.6	55.6	61.8	68.5	75.4	80.8	82.3	81.6	78.5	70.1	61.0	55.6	68.6	81.6	69.8	54.9	68.7	17	1822–29; 1842–54	Military Post, irreg.

St. Augustine, New Smyrna, and Fort Dallas are on the Atlantic coast; Jacksonville and Pilatka are on the St. John's; Fort Pierce (also called Fort Capron) is on Indian River between the St. John's River and Atlantic. Fort Myers is on the Caloosakatchie River, 15 miles from its mouth; Tampa is at the head of Tampa Bay 30 miles from the Gulf; Fort Meade is on Pease Creek, in the interior 46 miles from Tampa; Micanopy is south of Payne's Prairie and 12 miles south from Gainesville; Fort Fanning is on the Suwanee River. The other points are sufficiently well known.

The records, in many instances, not being for the same years at the different points, may mislead as to their comparative temperatures. Only those for the longest periods should be considered as approximating the true mean.

II.—*Table of Mean Temperatures for each Year, for two years beginning October, 1872, and ending September, 1874, as observed at the four Signal Stations in Florida.*

Station.	Position of Station.			October.	Nov'ber.	Dec'ber.	January.	February.	March.	April.	May.	June.	July.	August.	Sept'ber.	Spring.	Summer.	Autumn.	Winter.	Year.	
	Lat.	Long.	Alt.																		
			feet.																		
Jacksonville . .	30°24′	80°40′	14	68.2	58.0	51.0	52.4	59.2	58 9	69.2	75 6	80.0	81.6	81.6	78.5	67.9	81.0	68.2	54.2	67.8	Oct. 1872 to Sept. 1873.
				65.6	58.0	55.7	54.6	58.0	65.8	69.1	74.0	80.0	79.0	81.0	77.0	69 6	80.0	66.8	56.0	68.0	Oct. 1873 to Sept. 1874.
				66.9	58.0	53 3	53.5	58.6	62.3	69.1	74.8	80.0	80.3	81.3	77.7	98.7	80.5	67.5	55.1	67.9	Mean for the two years.
Lake City . .	30 13	82 40	200	66.7	56.1	49.7	50.3	57.6	57.8	67.7	75 2	77.7	79.8	78.6	76.8	66.9	78.7	66.5	52.5	66.1	Oct. 1872 to Sept. 1873.
				64.8	56.0	54.1	52.7	58.4	63.7	67.0	74.0	77.0	78 0	80.0	77.0	68.0	78.3	65.9	55.0	66.8	Oct. 1873 to Sept. 1874.
				65.7	56.0	51.9	51.5	58.0	60.7	67.3	74.6	77.3	78.9	79.3	76.9	67.4	78.5	66.2	53.7	66.4	Mean for the two years.
Punta Rassa . .	27 00	82 18	5	75.0	68.3	63.5	62 0	66.4	65.2	72.8	78.8	80 6	80.9	80 5	81 1	72.2	80.6	74.4	63.9	72.7	Oct. 1872 to Sept. 1873.
				73.0	64.0	64.7	62.7	58.9	71.0	73.8	76.0	79.0	79.0	83.0	78.0	73.6	80.0	71.6	63.4	72.6	Oct. 1873 to Sept. 1874.
				74.0	66 1	64.1	62.3	67.6	68.1	73.3	77.4	79.8	79 9	81.7	79.0	72 9	80.3	73.0	64.6	72.6	Mean for the two years.
Key West . .	24 32	81 48	10	78.2	73.7	69 1	69.9	72.1	71.5	76.8	82.4	83.6	83.0	83.5	82.5	76 9	83 3	78.1	70.0	77.0	Oct. 1872 to Sept. 1873.
				76.0	73.0	70.5	68.0	73.0	75.4	78.0	81.0	83.0	83.0	84 0	80.0	78.1	83.3	76.0	70.5	75 3	Oct. 1873 to Sept. 1874.
				77.1	73.3	69.8	68 9	72.5	73.4	77.4	81.7	83.3	83.0	83.7	81.2	77.5	83.3	77.0	70.2	76.1	Mean for the two years.

Note.—In the two tables of temperature there is a slight discrepancy in the latitude of Jacksonville, and a considerable one in longitude. Other discrepancies of the same character are noticeable. In fact there is considerable discrepancy of authority and maps as to the positions of the parallels of latitude in Florida, which should be settled. At present I am unable to decide which is right.

III.—*Table of Mean Daily Range of Thermometer for each Month, Season, and the Year.*

Station.	1873.			1874.									Spring.	Summer.	Autumn.	Winter.	Year.
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.					
Jacksonville . .	10.9	12.	11.	13.	13.5	13.9	11.	10.	7.	6.	8.5	7.	11.6	7.1	9.9	12 5	10.2
Lake City . .	16.	16.	13.	16.	16.	17.7	13.9	13.	9.	9.	13.	9.	14.8	10.3	13.6	15.	13.4
Punta Rassa . .	8.8	9.6	10.5	9.2	7.3	7.7	7.5	6.	6.	6.	5.	5.	7.	5.6	7.8	9.	6.8
Key West . . .	6.3	5.8	5.8	5.7	6.3	9.9	6.	7.	7.	7.	6.	5.	7.6	6.6	5.7	5.9	6.4

Note.—This is not the maximum and minimum range.

IV.—*Table of Mean Annual Precipitation in Rain for each Month, Season, and the Year; from observations at various points in Florida for a period of years.*

Station.	Lat.	Alt.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Spring.	Summer.	Autumn.	Winter.	Year.	No. of yrs.	Date.	Authority and Remarks.
		feet.																				[and incomplete.
St. Augustine	29°48′	25	2.09	1.63	2 34	1.56	2.00	4 27	3.24	3.03	5.85	2.42	1.29	2.08	5.90	10 54	9 56	5.80	31.80	3–6	1844–46; 1851	Military Post, imperfect
Pilatka . .	29 34	25	0.93	2.64	7.16	2 47	2.86	6.54	7.35	7.60	4.33	3.78	1 60	1.42	12.49	21.49	9.71	5.00	48.69	3	1841–43	Military Post.
Fort Pierce .	27 30	25	4 45	2.72	3.01	3.95	4.27	14.28	5 16	6.81	9 27	5.36	2 21	1.59	11.13	26.25	16 18	8.76	62.98	3–3	Mar. 1852 to May 1855	" "
Indian Key .	24 50	10	2.36	1.37	1.30	2.00	3.29	3.30	4.52	4.22	6.57	6.30	3.66	0.06	6.59	12.04	16 53	3.79	38.95	2	1836–37	Howe.
Key West .	24 32	10	2.86	1.38	4.21	1.55	2 58	8.29	3.35	4.95	7.79	6.38	1.18	3.13	8.34	16 60	15.35	7.37	47.65	6–6	1844–45; 1850–55	Military Post.
Fort Myers .	26 38	10	3 90	2.16	4.60	3.14	3.33	14.59	8.45	8.57	9.54	1 37	0.96	2.27	11.07	31 61	11.90	8.33	62.91	5	1851–55	" "
Tampa . .	28 00	20	2.20	3 01	3.37	1 95	3 24	7.04	11 10	10.10	6.23	2.40	2.00	2.83	8.56	28.24	10.63	8.04	55.47	15	1840–55	" "
Fort Meade .	28 01	80	1.07	1.01	1.64	1.78	4.01	7.79	7 55	6.35	4.85	1.50	0.56	1 79	7.43	21.69	6.91	3.87	39.90	3–7	May 1851 to Nov. 1854	" "
Cedar Keys .	29 07	15	2 80	5.30	1.80	1.40	0.90	6.40	4.07	11.88	4.97	3 80	2 17	2.01	4.10	22 35	11.94	10.11	48.50	2–6	July 1840 to 1842	" "
Pensacola .	30 18	20	3.87	4.95	5.87	2.94	4 05	4.66	6.80	7.23	5.25	2.41	6.05	2.90	12.86	18.69	13.71	11.72	56.98	10	July 1842 to June 1855	

Table of subsequent years, 1855, 1856, *and* 1857; *from Surgeon-General's Report*, 1860 (*giving the mean*).

Station.	Lat.	Alt.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Spring.	Summer.	Autumn.	Winter.	Year.	No. of yrs.	Date.	Remarks.
		feet.																				
Fort Pierce .	27°30′	25	4.54	5.25	2.97	1.58	4.48	5.82	7.05	6.49	4.58	4.09	4.37	3.23	9.04	18.20	14.00	13.12	56.23	3	1855–56–57	Not complete for 1855.
Fort Dallas .	25 55	20	5.73	1.06	4.76	2.96	7.53	5.36	9.37	4.25	6.77	7 92	2 39	2.13	15.26	18 86	16.10	8.94	60.19	3	Same	
Fort Myers .	26 38	10	3 59	2.72	3.83	.87	1.79	8.62	9.20	7.82	4.48	2.03	.77	2.11	6.50	25 75	7.28	8.42	47.96	3	Same.	
Tampa . .	28 00	20	3 14	2.60	2.52	.55	1.06	6 09	14 82	6.77	2.40	.60	1.69	2.29	4.05	27.77	4.38	8 04	53.10	3	Same.	
Pensacola .	30 18	20	3.29	1 52	4.99	.55	3.28	5.19	11 51	11 64	4.37	3.00	7.78	9.02	8.82	28.33	14.61	13.83	65.62	2	1855–56	One month wanting in [each, 55–57.

V.—*Table of Mean Annual Precipitation in Rain for each of two years; observed at the four Signal Stations in Florida.*

Station.	Position of Station.			October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	Spring.	Summer.	Autumn.	Winter.	Year.	Date.
	Lat.	Long.	Alt.																		
			feet.																		
Jacksonville .	30°24′	80°40′	14	6.37	1.71	4.81	3.86	0.50	5.20	0.56	5.36	8.41	7.75	6.21	10.67	11.12	22 37	18.75	9 17	61 41	Oct. 1872 to Sept. 1873.
				5.50	2.52	2.52	0.82	7.31	1.70	1.55	4.65	4.44	7.48	6.80	7.07	7.90	18.72	15.09	10.65	52.36	Oct. 1873 to Sept. 1874.
Lake City .	30 13	82 40	200	5.24	1 52	3.47	5.36	1.25	6.31	2.70	5.97	9.27	5.81	5.25	3 86	14.98	20.33	10.62	10.07	56.00	Oct. 1872 to Sept. 1873.
				0.84	3.44	2.14	0.42	6.89	1.22	4.14	2.02	6.52	3.86	0.53	4.33	7.38	10.91	8.61	9.45	36.35	Oct. 1873 to Sept. 1874.
Punta Rassa .	27 00	82 18	5	2.82	0.53	1.87	6.84	0.48	1.59	3.58	9.09	5.21	5.13	9.85	9.13	14 26	20.19	12 48	9.19	54.12	Oct. 1872 to Sept. 1873.
				1.87	2.49	1.28	1.53	2.51	0.00	0.40	1.21	6.75	6.95	4.78	4.06	1.66	18.48	8.42	5.32	33.83	Oct. 1873 to Sept. 1874.
Key West .	24 32	81 48	10	2.09	0.98	0.65	3.91	0.16	0.04	2.02	1.02	3.86	4.95	3.67	6.23	3.08	12 48	9.30	4.72	29.58	Oct. 1872 to Sept. 1873.
				0.77	0.51	2.89	2.55	0.77	0.13	1.85	0.34	4.29	4.01	4.26	5.66	2.32	16.56	6.93	6.11	31.92	Oct. 1873 to Sept. 1874.

VI.—*Table of Mean percentage of Humidity in the Atmosphere for each Month, Season, and the Year; observed at the four Signal Stations in Florida for one year.*

Station.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	Spring.	Summer.	Autumn.	Winter.	Year.
Jacksonville . .	71	68	77	72	81	68	68	67	75	77	70	76	67	74	71	76	72
Lake City . . .	77	71	77	70	77	68	67	64	76	78	71	78	66	75	75	74	72
Punta Rassa . .	74	74	76	75	78	74	71	71	73	73	76	77	72	70	75	76	73
Key West . . .	72	74	75	77	74	64	65	65	88	68	60	72	64	72	72	75	70

VII.—*Table of Mean Barometrical Pressure for each Month, Season, and the Year, for each of two years; observed at the four Signal Stations in Florida.*

Station.	Position of Station.		Elevation of baro. above sea-level.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	Spring.	Summer.	Autumn.	Winter.	Year.	Date.
	Lat.	Long.	feet.																		
Jacksonville .	30°24′	80°40′	22 9	30.07	30.15	30.23	30.13	30.12	30.18	30.05	29.98	30.03	30.09	30.07	30.02	30.07	30.06	30.08	30.16	30.09	1872–73.
				29.92	30.07	30.16	30.16	30.12	30.06	30.07	29 96	30 04	30.06	30.02	30.01	30.03	30.04	30.00	30.11	30.06	1873–74.
Lake City . .	30 13	82 40	216	30.04	30.23	30.18	30 09	30.10	30.17	30.03	29.96	30.03	30.09	30.07	30.02	30.05	30.06	30.09	30.09	30.07	1872–73.
				30.08	30.08	30.21	30 21	30 12	30.05	29.97	30.00	30.02	30.05	30.01	30.01	30.00	30.02	30.05	30.08	30.06	1873–74.
Punta Rassa .	27 00	82 18	17	30.01	30.09	30.16	30.10	30.15	30.19	30.07	29.99	30.06	30.10	30.08	30.00	30.08	30 08	30.03	30.13	30.10	1872–73.
				28.97	30.10	30.15	30.17	30.14	30.06	30.04	30.02	30.06	30.04	29.66	30.00	30.04	29.92	29.69	30.12	29.94	1873–74.
Key West . .	24 32	81 48	17	29.95	30 03	30.13	30.07	30.12	30.15	30.04	29.97	30.04	30.07	30.05	29.98	30.05	30.05	29.97	30.10	30.04	1872–73.
				30.00	30.07	30.11	30.13	30.09	30.06	30.07	29.99	30.04	30.06	29.97	29.98	30.04	30.01	30.01	30.11	30 04	1873–74.

VIII.—*Table of Winds, with Direction thereof, for each Month, Season, and the Year; observed at the four Signal Stations in Florida; also mean daily velocity for one year.*

Station.	Direction of wind.	1873.			1874.									Spring.	Summer.	Autumn.	Winter.	Year.	Mean daily velocity of wind for each month.		No of cloudy days.	
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.							miles per hour.		
Jacksonville	N.	5	6	8	9	6	1	3	2	1	0	0	6	6	1	17	23	47	October	7	6	
	N. W.	4	1	4	8	1	2	3	0	1	1	0	0	5	2	5	8	20	November	6	10	
	W.	3	9	3	3	1	4	0	1	0	0	0	2	5	0	14	7	26	December	7	18	
	S. W.	0	4	3	4	2	8	7	2	6	3	6	0	17	15	4	9	45	January	6	15	
	S.	1	2	2	1	3	7	6	4	8	8	4	4	17	20	7	6	50	February	6	18	
	S. E.	1	1	2	3	3	3	6	1	8	4	2	1	10	14	3	8	35	March	7	6	
	E.	1	1	0	2	1	0	2	7	4	9	4	11	9	17	13	3	42	April	8	6	
	N. E.	14	4	7	5	8	6	2	7	2	6	15	6	15	23	24	20	82	May	6	6	
	Variable.	0	2	1	1	3	0	1	7	0	0	0	0	8	0	2	5	15	June	7	14	
	Calm.	2	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	3	July	6	13	
																			August	6	8	
																			September	6	8	= 128
Lake City	N.	6	4	5	3	4	2	2	4	0	0	0	6	8	0	16	12	36	October	5	6	
	N. W.	1	8	0	1	4	4	3	1	0	2	0	0	8	2	9	5	24	November	4	15	
	W.	2	4	4	3	1	2	1	2	2	0	1	3	5	3	9	8	25	December	4	15	
	S. W.	2	3	5	5	6	13	9	8	9	3	10	0	30	22	5	16	73	January	5	13	
	S.	1	0	1	0	3	3	5	1	5	8	0	6	9	13	7	4	33	February	5	16	
	S. E.	1	2	1	4	2	1	4	0	6	8	3	0	5	17	3	7	32	March	5	5	
	E.	6	3	6	4	3	2	3	8	5	3	4	6	13	12	15	13	53	April	6	6	
	N. E.	11	6	6	11	3	5	1	3	3	7	13	9	9	23	24	20	75	May	5	6	
	Variable.	0	0	3	0	2	0	2	3	0	0	0	0	5	0	0	5	10	June	4	13	
	Calm.	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	July	4	11	
																			August	4	6	
																			September	5	8	= 120

Table of Winds, etc.—Continued.

Station.	Direction of wind.	1873.			1874									Spring.	Summer.	Autumn.	Winter.	Year.	Mean daily velocity of wind for each month.		No. of cloudy days.	
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.							miles per hour.		
Key West	N.	4	6	6	4	1	1	4	3	1	1	3	2	8	5	12	11	36	October	0	5	
	N. W.	1	5	2	2	2	5	2	1	3	3	4	1	8	10	7	6	31	November	12½	11	
	W.	1	1	2	0	0	5	2	5	3	3	2	2	12	8	4	2	26	December	11	12	
	S. W.	1	1	1	1	4	5	2	2	5	4	5	0	9	14	2	6	31	January	9	15	
	S.	0	1	1	1	3	3	6	2	2	5	0	0	11	7	1	5	24	February	9	10	
	S. E.	1	1	2	3	5	6	2	0	4	4	0	0	8	8	2	10	28	March	14	2	
	E.	9	4	8	3	5	3	7	6	8	5	5	20	16	18	33	16	83	April	10	7	
	N. E.	11	7	6	13	3	2	1	6	4	6	9	5	16	19	23	22	80	May	8	5	
	Variable.	0	3	1	3	5	1	4	6	0	0	0	0	11	0	3	9	23	June	9	14	
	Calm.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	July	6	18	
																			August	8	12	
																			September	9	14	= 125
Punta Rassa	N.	7	4	6	3	3	1	1	4	0	2	0	1	6	2	12	12	32	October	15	8	
	N. W.	3	3	2	3	1	4	4	2	1	4	6	2	10	11	8	6	35	November	12	15	
	W.	1	4	1	0	0	1	1	1	0	0	2	1	3	2	3	1	9	December	13	13	
	S. W.	0	2	2	1	4	0	0	1	0	3	3	2	1	6	4	5	16	January	11	11	
	S.	0	1	0	0	0	0	1	0	1	3	0	1	1	4	2	0	7	February	7	13	
	S. E.	0	0	1	0	4	8	3	3	9	1	8	4	14	18	4	5	41	March	8	6	
	E.	6	5	5	5	11	12	16	9	17	14	6	12	37	37	23	21	118	April	12	6	
	N. E.	11	10	11	18	4	3	3	5	2	4	7	6	11	13	27	33	84	May	10	6	
	Variable.	0	3	0	0	1	0	1	4	0	0	0	0	2	4	0	3	9	June	8	18	
	Calm.	0	0	0	0	0	2	0	2	0	0	0	0	2	2	0	0	4	July	7	15	
																			August	6	19	
																			September	9	16	= 146

From the first table of mean temperature, supplied originally by the Surgeon General's Office, that excellent writer on the Climatology of the United States, Lorin Blodget, has indicated the following isothermal lines for Florida:—

The spring isothermal of 70°, enters a little south of St. Augustine, and inclining north as the more elevated portion of the State is reached, rises above the thirtieth degree of latitude, and again declining south towards the Gulf, follows the thirtieth parallel of latitude along the Gulf coast of Middle Florida. The spring isothermal of 75° crosses the peninsula below the 27th degree of latitude, and has a considerable northward curve.

The summer isothermals of 81° strike each of the peninsula coasts between the 27th and 28th degrees of latitude, and respectively follow the coast-lines. Those of 82° traverse the interior of the peninsula, the one on the east side of the centre pursuing its course into Georgia, while that on the west side runs through Middle and West Florida. These summer isothermal lines follow the length of the peninsula, and consequently in it have a northwest and southeast direction.

For autumn the isothermal of 70° enters on the 30th parallel of latitude, and curving a little south as the more elevated region is reached, rises again even north of that parallel near the Gulf, and follows the coast of Middle and West Florida. That of 75° crosses the peninsula between the 27th and 28th degrees of latitude, passing out on the Gulf side a little south of its opposite point of entrance. The lowest position of an isothermal of 72° for the same season is indicated as crossing the peninsula between the 28th and 29th degrees of latitude. This has also a little southerly curve as it crosses the middle and western slope of the peninsula.

For winter the isothermal of 55° enters the State a little north of the 30th parallel of latitude, and curving southward in the elevated region, again rises northward near the Gulf coast, which it follows through Middle and West Florida. That of 60° crosses the peninsula near the 29th degree of latitude. The lowest position of isothermal of 62° is indicated as crossing the peninsula a little south of the 28th parallel of latitude. The isothermal of 65° crosses the peninsula between the 26th and 27th degrees of latitude. A minimum isothermal of 50° is also indicated as beginning at New Smyrna, descending southwest to the centre of the peninsula, and thence running west to Tampa. Between the points of entrance on the Atlantic and of exit on the Gulf of this mini-

mum isothermal, there is a difference of three-fourths of a degree of latitude. While this isothermal is only occasional and not constant for the season, its great southerly deflection can only be explained by the greater altitude and drier atmosphere of the centre and western slope of the peninsula. To the same causes is to be also attributed the southerly curves of the winter isothermals in crossing the central ridge of the peninsula, and their exit on the Gulf side a little south of their opposite points of entrance.

The isothermal of 70°, as the mean temperature for the year, crosses the peninsula about the 29th degree of latitude; and that of 75° a little south of the 27th degree of latitude. The lowest position of an isothermal of 72° is indicated as crossing the peninsula about the 28th degree of latitude.[1]

Exposed as Florida is on the east to the Atlantic and on the south and west to the Gulf of Mexico, and having a large area of level country on the north, her climate, owing to frequent changes in the direction of the wind, may be considered rather variable during winter and spring as regards transitions of temperature. During March, 1873, the minimum temperature at Punta Rassa was 38°, a degree of cold sufficient for light frost in interior elevated districts. At the same place in December, 1872, the minimum was 35°, which may be considered as fully representing a light frost in the interior. A temperature of freezing, 32° for March has occasionally occurred at Tampa, and light frosts for the same month are almost an annual occurrence. The average minimum temperature at Tampa for winter for a period of twelve years is 34°.4; though the thermometer may some winters fall even below 30°. It was down to 30° in 1843, 1849, and 1852. In 1857 the thermometer fell to 26° at Tampa, 32° at Fort Myers, 29° at Fort Pierce on Indian River, and to 30° at Fort Dallas on the Miami.[2] It is highly probable that such a depression has been reached several times since. In 1835 the thermometer, it is said, fell at Fort King (near Beala) one degree north of Tampa, to 11°, or 21° below freezing. At the same time it is reported to have fallen 7° below zero in the latitude of St. Augustine, and that "all kinds of fruit trees were killed in the ground and extensive orange groves destroyed."

Now, when it is remembered that the difference in the latitude

[1] See Blodget's Isothermal Charts.

[2] Meteorological Register of Surgeon General's Report, 1860.

of the two places does not amount to a degree, it is impossible to credit the statement and believe that there was between the two places a difference in temperature of 18°. Besides there is no authority for it outside of historical tradition. Assistant Surgeon R. F. Simpson, writing from Fort Dallas in April, 1857, says: "There was frost and ice on December 25 and 26, 1856, and January 20, 1857, with the thermometer at 30° at sunrise." Remembering that Fort Dallas is low down on the eastern coast of the peninsula, below the 26th degree of latitude, it becomes very questionable whether there is any part of the peninsula universally exempt from frost, though still of not sufficient intensity to materially affect tropical plants. So far as I know, there are no records for the same year (1857) in the upper eastern part of the State; but at Mount Vernon Arsenal, near the Florida and Alabama line, in latitude 31°12′ with 200 feet altitude, the minimum was 10°, or 22° below freezing. This difference of 20° of temperature between Fort Dallas and Mount Vernon Arsenal would only give about 3° difference of temperature for each degree of latitude. Now, remembering that the winter of 1856–57 was the coldest of which we have any record—although the observations at Tampa embrace twenty-seven years—we are compelled to discredit the excessive degree of cold for St. Augustine in 1835. Nevertheless these facts go to demonstrate pretty conclusively that during some winters a considerable degree of cold, as compared with the mean winter temperature, is experienced in every section of the State, though occurring at rather irregular and mostly long intervals of several years. Such depressions are never of such intensity south of the 29th degree of latitude as to jeopardize bearing sweet orange trees, though sometimes fatal to those of only a few years' growth, and such perennial tropical plants as the banana, pine-apple, etc. In these unusual depressions, however, the climate forms no exception, as the same thing does occur in the milder temperate latitudes of the Eastern Hemisphere.

The maximum temperature of summer generally ranges from 92° to 95°, rarely exceeding the latter except in the northern part of the State. This fact is so contrary to the impression generally entertained by the public outside of the State, that to many the statement appears at first incredible. It need not appear so strange, however, when it is remembered that in the north temperate zone, the days are longer and the nights shorter during summer as we advance from the lower to the higher latitudes, and that

consequently the rays of heat from the sun are longer concentrated on the earth's surface with a proportionately shorter night for cooling by radiation. The reverse being the case in the winter, it is thus that an equal distribution of heat for the year in the lower and higher latitudes of the same zone is insured, the winter deficiency being compensated by the summer excess.

The regular alternation of the land and sea breezes, the latter being the cooler by several degrees, greatly ameliorates also the summer heats of Florida, and markedly so all along her extensive coast. In corroboration of these statements I quote from Surgeon-General Lawson, who says:—

"The climate of Florida is remarkably equable and proverbially agreeable, being subject to fewer atmospheric variations, and its thermometric ranges much less than any other part of the United States, except a portion of the coast of California.

"For example, the winter at Fort Snelling, Minnesota Territory, is 48° colder than at Fort Brooke (Tampa), but the summer at Fort Brooke is only about 8° warmer. The mean annual temperature of Augusta, Georgia, is nearly 8°, and at Fort Gibson, Arkansas, upwards of 10° lower than at Tampa, yet in both those places the mean *summer* temperature is higher than at Tampa. In the summer season, the mercury rises higher in every other part of the United States, and even in Canada, than it does along the coast of Florida. This is positively shown by meteorological statistics on my file in this bureau. At Portland, and on the coast of New England, the thermometer attains an average height in summer of 94° Fahrenheit, and in winter descends to —7°, having an annual range of 101°. At Fort Mifflin, near Philadelphia, the thermometer has an annual range of 87°, rising to 95° Fahrenheit in summer, and falling to 8° in winter. At Fort Moultrie, Charleston harbor, the average range is 70°, being in summer 90°, and in winter 20°. At Fort Pierce (or Capron), Indian River, Florida, the range is 59°, the annual range averaging for its highest point 94°, and the lowest 35°. At Tampa, the annual range is 58°, being 92° in summer, and 34° in winter; while at Key West the annual average range is only 35°, being for summer 89°, and 54° for winter. If we were to extend our comparison by including the stations in the interior of the United States, remote from the influences of the sea-breezes, the difference would be still more apparent. The point under consideration will, however, be illustrated sufficiently by comparing the temperature of Florida, as

above given, with that of portions of Texas lying within the same parallels of latitude. At Fort Brown, near the mouth of the Rio Grande, and where the summer heats are much modified by the strong coast-breezes, the mean annual range is 67°, or from 95° in summer to 28° in winter. In the interior of Texas, the range is very great, the summer heats rising to a mean of 112° in the valley of the Rio Grande at Laredo (Fort McIntosh), and to 103° at the posts on the upper plains. It falls to a mean of 20° in winter on the Rio Grande valley, and to 10° on the plains, making the range near 92° in each case. At Fort Smith, Arkansas, the range is 108° having the summer temperature of 103°, and the winter of —5°."

The above extract was written in October, 1855, and may be taken as a fair comparison of the temperature of Florida with that of other sections of the United States.

The table of daily mean range of temperature for each month, for the year begining October, 1873, and ending September, 1874, calculated from the daily bulletins of the Signal Office, show it to be comparatively small. For the seasons, the greatest range is in the winter and spring. The daily range diminishes as the peninsula is descended, and at Key West there is but little difference for all seasons, while the daily range is small.

Another element in a climatological consideration is humidity of the atmosphere, and the amount of rain-fall. As to the rain-fall, its mode of precipitation—whether rapidly or slowly—is also important as materially affecting the state of the weather. Regarding the humidity of the atmosphere, the amount of data I possess—only for one year (see table)—is too insignificant, and the positions of the few signal stations too unlike and peculiar individually, to allow of any attempt at generalization. Yet their general tendency is to correct an erroneous impression entertained even by some physicians in the northern parts of the State, and by the public generally, to wit, that there is greater humidity for the winter the lower the peninsula is descended. The table of mean monthly percentage of relative humidity gives pretty nearly the same for all four of the signal stations. But it must be remembered, as previously intimated, that that for Punta Rassa—from its littoral position—cannot be considered as fairly representing the interior of the peninsula, from the greater humidity of the atmosphere always present on the coast. While there is no great variation from the annual mean for any season, yet spring shows the least percentage. The rela-

tive percentage of humidity is, however, not in excess of that of the Atlantic States, nor of California during winter as observed at San Francisco and San Diego, so far as a cursory examination enables me to judge. The saline impregnation of this moisture, arising from the Atlantic and Gulf, doubtless imparts to it also antiseptic and salubrious properties.

The rain-fall in Florida is not characterized by uniformity as to amount for different years and same seasons, nor as regards sections and localities. This is particularly noted on examining the tables for separate years of the meteorological register embodied in the Surgeon General's reports, published in 1856, 1860. This variation from the mean is greater in excess than deficiency. For instance, the mean at Tampa is 55 inches. In 1840 the rain-fall at this place was 89 inches, and in 1854, 69 inches, yet the minimum rain-fall has never been below 40 inches during the same period of observation. Again, at Pensacola in 1855 it amounted to 77 inches. The exposed position of St. Augustine immediately on the Atlantic, accounts to some extent for the smaller average rain-fall at that place as compared with other points in the State. The same applies to Punta Rassa as a signal station, though hardly with equal force, as the latter is not quite so exposed to the open sea. The well-known fact that there is less rain on the coast than in the interior is a sufficient explanation. The rain is not equally distributed through the year, but is so excessive in the summer as to specially denominate that the rainy season. According to Loomis' meteorology, Alabama, Louisiana, and Oregon exceed Florida in the annual amount of rain-fall; while Virginia, the Carolinas, Tennessee, and Kentucky equal her. By this author, the annual mean rain-fall for the whole State is put at 48 inches, which is in conformity with observations so far made. As to the distribution of rain throughout the year the same author says:—

"Throughout most of the United States east of the Rocky Mountains, the rain is pretty equally distributed through the different months of the year, but the rain of summer is everywhere somewhat greater than the rain of winter, including the melted snow. In New England, the difference between the rain for these two seasons is less than 10 per cent.; in the State of New York it is nearly 50 per cent.; in Virginia and the Carolinas it is 100 per cent.; in Florida it is 200 per cent.; in Texas it is 75 per cent.; in Ohio it is 25 per cent.; in Michigan and Wisconsin it is 140 per cent.; while in Iowa and Kansas it is 300 per cent.; that is, the fall of

rain in summer is four times as great as it is in winter. On the Pacific coast, this law is reversed. In California, the rain of winter is more than twenty times as great as that of summer, and in Oregon, it is seven times as great."

From this estimate it is seen that the summer rain in Florida is three times more than that of winter. This, taken in connection with the mean annual rain-fall of the Atlantic Gulf States and the winter rain-fall of the Pacific States, demonstrates the winter climate of Florida to be a comparatively dry one, especially that of the peninsula. As nearly all the posts where meteorological observations were made are on the peninsula, it is presumable that this estimate more fully represents that section than it does the northern portions of the State. It is only the peninsular portion of the State that has a climate of its own markedly different and distinct from that of the northern portions of the State, which possess no distinctive features from similar sections, contiguous to the coast, of the other Gulf States. The winter climate of the peninsula is dry, and this dryness becomes more marked as the peninsula is descended. Blodget, in his Climatology of the United States, says:—

"By reference to the general tables it will be seen that there is a marked tendency toward the development of a winter dry season even in the States next to Florida, and that in southern Florida this is quite decided and almost as fully developed as in the recognized tropical climates. As before remarked, however, there are great irregularities, and often quite contradictory results for single years. . . . The most prominent feature of rain distribution in Florida, in distinction from other parts of the United States, is this great irregularity, which prevents us from getting clear general views from periods embracing but two or three, or a few years. . . . . The first approach of this dry season is made in October, and from the minimum, which appears to occur in November, there is a partial resumption of the rains apparent in mid-winter, to be followed by other months of less rain. But as a whole, the winter from October forward is a dry season on the peninsula of Florida. It appears to be a climate ordinarily of a division into two principal seasons in regard to the rains, the wet summer and the dry winter, yet either may be interrupted by the extremes of an opposite character much greater than those occurring in any other known district. . . . .

"Beyond the plains the characteristic features of the districts of

periodical rains are strikingly exhibited, and Southern Florida gives strong evidence that it should be identified with the districts of periodical rains rather than with the area of constant precipitation of the Eastern United States. . . . . From the Gulf coast northward there is also a decided increase of annual precipitation at some points, and for a moderate distance; as also from the coast of St. Augustine, Florida, northwestward towards the interior of Georgia. . . . . The south of Florida alone gives as soft a climate for the winter as that of the south coasts of the Mediterranean, and at a point far enough south to do so, the tropical features of a dry winter and rainy summer become instituted. At Tampa the average temperatures are nearly those of Cairo, Egypt, and the difference of latitude two degrees."

The winter dry season in the Florida peninsula is generally extended into the latter part of May or first of June. Another distinctive feature of the peninsula climate in connection with the rains of winter—and this I wish particularly to emphasize as being the case on the Gulf side—is that they generally assume the character of showers, and are not diffused over several consecutive days, in a light but constant rain, as is the case in the northern sections of the State, and in the Southern Atlantic and Gulf States generally. As a natural consequence the number of wholly cloudy days in the peninsula is much less also. Fogs are also comparatively rare, especially on the Gulf side of the peninsula, as compared with other sections of the State. The absence of fogs becomes more marked during all seasons as the peninsula is descended.

The frequency of dense and persistent fogs on the Atlantic and along the St. John's is doubtless dependent on the reduction of the atmospheric temperature on that side by the shoaling of the Arctic under current. The U. S. coast surveys, as well as the deep sea soundings of a late date of H. B. M. ship Challenger, have conclusively determined the returning deep Arctic current, the counter-movement of the Gulf Stream, obtaining in its course towards the equator a westward tendency from the rotation with increased diameter of the earth, shoals up on the eastern coast of Florida. The result must necessarily be to lower the temperature of the superjacent atmosphere, and the latter coming in contact with the excessive humidity naturally afforded by a low level section of country, with its abundance of still and sluggish waters, could hardly fail in producing fogs and rain. This also accounts,

no doubt, for the number of rainy days on the eastern side of the peninsula being much larger than on the Gulf side, as is clearly shown by the registry of the weather embodied in the Surgeon General's Report for 1860. Besides, the more elevated and rather hilly nature of the middle and western slope of the peninsula, rendering the soil naturally drier, may also have some effect in rendering the climate of these sections less subject to excessive humidity.

The table of winds shows how many days the wind was from one of the cardinal points of the compass, and its monthly mean rate of velocity for one year. The winds are generally very changeable, except very low down on the peninsula, which is slightly within the belt of the trade-winds. The upper two thirds of the peninsula constitute the calm belt, or that which has no regular movement with either the westerly or trade-winds.

By reference to the table it will be seen that the range of barometrical pressure, at the four signal stations, for two years, is very inconsiderable; and that there is but little difference in the yearly mean for the several stations. September has a low pressure for Punta Rassa and Key West, while May has the lowest pressure at all the different stations. Storms and such like are not more common in Florida than in the other Southern States. Most of the storms originating in the Gulf follow the Gulf stream, and consequently their outer circles only reach the peninsula, seldom amounting to much.

Lightning with thunder is quite common in the summer season. The variety known as *zigzag* is the most common kind; very little *ball* or *sheet* lightning; while *heat* lightning in the early part of the night may be observed for a short time preceding the commencement of the summer rains. As to the electrical tension of the atmosphere I have no observations to offer.

So far as my observations extend, tests for ozone give positive results for all seasons.

When the climate of Florida is compared with that of any of the United States its superiority becomes apparent. As to dryness of winter climate the peninsula compares favorably with California, the rain fall for this season being about the same. It is only the winter isothermal of 55° which traverses Northern Florida and Lower California. The winter isothermal of 65° crossing the peninsula does not even appear in Texas on the lower Rio Grande. If compared to the drier ones of Arizona, New Mexico, and the lower

Rio Grande, we find in the latter a greater thermometric range, a less equable temperature with a lower mean, and much greater summer heat. And considering the nature of the soil of these western dry sections, it is evident that this arid condition of their atmosphere must, of itself, be a very serious drawback. The soil being sandy, and in many places alkaline, cannot fail to charge the air with fine particles of dust, which would prove more or less injurious to the lungs.

Assistant Surgeon P. F. Harvey, writing of the climate of the lower Rio Grande (*N. Y. Medical Record*, vol. x. No. 2), says:—

"Several cases of consumption came under my observation. Two were instances of invalids seeking a climate which they thought would be beneficial to them. Both the latter were rapidly fatal. Six cases were local, and two of them terminated fatally during my stay. These facts, and others relative to the climate of which I speak, convince me that it is not adapted to a phthisical patient, or to one so inclined. In fact I regard it as one of the most unfavorable portions of our country as a sanitarium for consumptives, or even for the weakly and delicate persons who seek a mild and genial place of resort for the winter season. Another circumstance which militates against the adoption of this climate by consumptives during the winter, is its variability. Sudden changes from an enervating heat to a temperature nearly, or quite, as low as the freezing point, take place frequently during the winter months. In my experience, a fall of 40° inside of twelve hours was not an unusual occurrence. Stray winds were frequent throughout the year, and during their prevalence the atmosphere was so charged with fine particles of sand as to be extremely irritating to susceptible lungs. There is little doubt in my mind that this climate has the effect of hastening tubercular deposit, or caseiform infiltration, in persons of a phthisical habit, if not of actually developing consumption *de novo*."

These remarks, no doubt, apply with equal pertinency to Arizona and New Mexico. It is, moreover, highly probable that the breathing of an atmosphere charged with fine particles of sand would, in the course of a few years, produce chalicosis pulmonum in previously healthy lungs. "Meinel found 18.2 per cent. of sand in the lungs of a railroad station-master who was stationed in an extremely sandy region. Chalicosis does not differ in its general course materially from other forms of pneumokoniosis. It is said that the sputa now and then contain stony concretions.

The anatomical features also resemble, in the main, those observed in siderosis. . . . . The same bronchitic and peri-bronchitic processes occur together with the caseous deposits, cavities, and the final eruption of tubercles."

NOTE.—At the meeting of the State Medical Association in Jacksonville, Fla., last February, Dr. A. S. Baldwin of that city read an interesting paper on Climatology, with some reference to that of Florida. Just from hearing the paper read, the impression made on my mind was that it did not specially, but only incidentally, treat of the climate of Florida. Nevertheless it contained much valuable information relative to the latter, and not the least was the Dr.'s own long-continued observation, at Jacksonville—which, had circumstances enabled me to have had recourse to it, would doubtless have been of great benefit in preparing this paper.

SANITARY.—As to the salubrity of the climate of Florida—in the absence of anything like a registration law, or any form of mortuary reports—the only statistics to be depended on, as to percentage of sickness and mortality, are those of the troops in Florida during the long Seminole disturbances. In a letter to an eminent citizen of Florida (Hon. D. L. Yulee), the Surgeon General himself very ably treated the subject of the health of Florida, giving statistics, and comparing it with other sections of the United States. While this more particularly relates to the peninsula, yet I trust I will be excused for quoting it at some length. The Surgeon General (1855) says:—

"Florida, washed on the east side by the Atlantic, and on the west and southwest by the waters of the Gulf, daily fanned by the breezes from the sea which are wafted over the whole face of the country and with an atmosphere of equable temperature through winter and through summer, its climate cannot be more unfriendly to the health of man than that of the adjacent States, which present but one side or a small portion of their territory to the Ocean. Florida may have more lakes on its surface, a few more rivers and rivulets, and a greater extent of swamp perhaps than the other States, but the exhalations from these sources are evidently modified and mollified by the universally pervading sea atmosphere, and must consequently be less destructive to human life than malaria which is eliminated by the swamps and bottom lands of Louisiana, Alabama, Georgia, and South Carolina, or by the banks of the watercourses even of other more northern sections of country.

"I have served in Florida and participated with the troops in the privations and the toils of the field, and I have also served with

an army on the northern frontier, and from my experience of the influence of climate and of active operations in the field upon the health of soldiers, I have no hesitation in expressing the belief that had the troops who were employed in the Florida war been engaged for the same length of time in active operations in winter and summer on the frontiers of Canada, though the *cases of indisposition* might have been less numerous, the *mortality* would have been infinitely greater than was experienced in Florida. The general healthfulness of many parts of Florida, particularly on its coasts, are proverbial. The average annual mortality of the whole peninsula, derived from returns in this office, is found to be 2.6 per cent., while of the other portions of the United States (previous to the war with Mexico) it is 3.5. The annual average of fevers of malarial origin in some parts of the State is very high, and in others very low, making a general average of about fifty-eight per cent. The general average of fatal cases during the Seminole war, and previously, were from enteric disorders, to which troops were more liable than persons in civil life. The higher rates of sickness, in general, among troops in the field than among civilians is more attributable to their constant and severe duties and greater exposure to morbific influences, than to peculiarities of climate.

"As the data from which the conclusions herein set forth are taken from military records, we must consequently make due allowance for the fact that the ratio of *cases under treatment* among troops and among citizens, is higher in the former than the latter case. And this may be accounted for in a great measure by the fact, that among the working classes of middle life, those cases only are recorded and enter into statistical data, which interfere with or prohibit manual labor, whereas among soldiers the slightest cases of indisposition are reported. In the latter case an admission on the sick list secures an exemption from labor, while in the former it occasions a loss of wages.

"Let us now compare the number of cases annually treated in Florida with cases under treatment at other sections of country, as furnished by the army records, and we find the following ratio: Along the region of the northern lakes, the number of cases under treatment was 200 per cent., the mortality being 0.9 per cent., along the coast of New England nearly the same percentage of cases under treatment (191), and the mortality 1.5 per cent.; through the interior of our country (those points north of latitude 39°, and distant from the lakes or Atlantic, *e. g.*, the northeast line

of Maine, the interior of New York, Pennsylvania, Iowa, Missouri, the northern part, Wisconsin and Minnesota), we find the percentage of cases annually treated a little over 300, with a mortality of 0.8 per cent. Again, along the Atlantic coast from New Jersey to Georgia, the number treated is not quite as high as the last, being about 289 per cent., with a mortality of three per cent. In the Southwestern States, the lower part of Missouri, Arkansas, West Tennessee, Mississippi, the Red River country, and Indian Territories south of latitude 36°, it is very large, being 350 per cent., while the mortality is 3.6 per cent. In the territory adjacent to the Lower Mississippi, it is reduced to 286 per cent. of cases treated (except, perhaps, when visited by unusually severe epidemics, as in late years), with the mortality of 4.4 per cent., while in Florida the average of cases annually treated is 246 per cent., and the mortality, as before shown, is 2.6 per cent. While, therefore, the ratio of mortality among the troops in the northern part of the United States is less than in Florida; on the other hand, the average mortality in Florida is less than in other sections of the Southern and Southwestern States; which, in fact, are the proper points of comparison, on account of similarity of diseases and geographical position.

"To illustrate the actual and comparative sickness and mortality of the peninsula of Florida, we may take as points of comparison three posts, one established on the Atlantic coast (Fort Marion, St. Augustine), one in the interior (Fort King, near Ocala), and a third on the Gulf coast (Fort Brooke, Tampa), and we find that at Fort Marion the average annual mortality for a period of eleven years (from 1824 to 1834 inclusive) is 2.36 per cent. In some of these years (1829, 1832, and 1833) no deaths were reported. The highest mortality for any single year was (in 1828) 7.01 per cent.; the lowest was (in 1825) 0.91 per cent.

"At *Fort Brooke* we have the annual average mortality for a period of nine years 1.01 per cent. The highest being (in 1830) 3.44 per cent., and the lowest (1824) 0.96. In three of the years (1827, 1831, and 1832) no deaths were reported.

"At *Fort King* we have returns for only a few years embraced in the periods above given. The average annual mortality, however, for three years (1827 to 1829 inclusive) is 1.19 per cent. In 1829 no deaths were reported. The highest mortality (in 1828) was 2.04 per cent; the lowest (in 1827) 1.63 per cent."

The above clearly demonstrates the superior salubrity of the

Florida peninsula as compared with the other Southern and Southwestern States. And when we consider the exposure to the sun and rain, the fatigues of scouting through hammocks, swamps, and everglades, together with the often unhealthy positions of military posts or temporary camps—inseparable from an Indian warfare—we naturally feel surprised at the low percentage of sickness and mortality among the troops in Florida as compared with other sections of the country where, in most instances, the troops were better quartered, and less fatiguing duties imposed. According to the medical statistics of the army, the most common diseases among the troops in Florida were malarial fevers and bowel affections.

The only other statistical data, which I can offer in this connection, are those of the State prison at Chattahoochee, supplied by the prison warden in his annual report for 1874. The whole number of convicts for the year was 150; the highest number at any one time 89, and the smallest 54. The attending physician in his report to the warden says that he had treated 1500 cases during the year; and an unlimited number applied who were not prescribed for. "Intermittent fever, remittent fever, rheumatism, dysentery, diarrhœa, and catarrhal fever were the principal cases treated." Two deaths are reported. 1500 cases of sickness to 150 subjects certainly indicates an extraordinary percentage of sickness. And, whether or not it legitimately represents the section of the State in which the prison is located, or is dependent on a bad sanitary condition of the prison, I do not know. The attempted explanation of the attending physician is in the following ambiguous language: "Most of the cases have originated in impaired constitutions, more or less permanently debilitated from habits of vice and intemperance, which the slightest exposure brings into active existence, resulting in a long catalogue of diseases, which causes a heavy expense to the State." What is brought "into active existence" is not very clear.

The following extracts, from the *Florida Settler*, a pamphlet issued by the State Commissioner of Immigration, indicate the classes of diseases most common in the northern sections of the State. They give no idea, however, as to the actual amount of sickness and mortality.

Dr. J. H. Randolph, of Tallahassee, says: "The diseases of Middle Florida are few, and possess little variety. In the spring, from sudden variations of temperature, from want of adaptation

of clothing, and from imprudence in diet, diarrhœa prevails, and sometimes sporadic cases of dysentery occur. In the summers, bilious remittent fevers, usually of a mild type, show themselves; and in the fall intermittents, with occasionally a case of the much dreaded 'congestive chill.'" These diseases are very amenable to medical treatment, and are rarely fatal. The ratio of mortality is unusually low, and a remarkable exemption exists from all epidemic and contagious diseases. Another writer, in the same county, says: . . . . . "We have intermittent and remittent fevers in summer and fall, and pneumonia and rheumatism afflict those who are exposed to the inclemencies of the weather in winter and spring."

A gentleman, writing from Madison County, says: "Chills and fever and light bilious attacks are common, but typhoid and congestive, typhoid with pneumonia, and other fatal diseases, are not prevalent here, though we are not entirely exempt from them."

Dr. W. S. Rice, of Hamilton County, says: "Our principal diseases are fever and ague, and remitting or bilious fever. Some years they prevail almost all over the county, but again we have a very light sprinkling of them. . . . . Once or twice I have seen pneumonia to prevail endemically."

Hæmaturia has also become a frequent complication in the malarial fevers in the northern part of the State, and even as low down on the peninsula as Marion County.

Throughout all the interior of Florida, malarial fevers are generally common, though occasionally localities are found quite exempt. The coast, as a rule, is entirely free from this class of fevers. From my own personal knowledge and observation, much less malarial fevers now prevail in the counties of Hernando and Hillsborough than formerly; and I am assured by Dr. Butts, of Beala, that the same is the fact as regards Marion County.

Dr. J. A. Williams, of Alachua, writes me that certain sections of that county are quite exempt from malarial fevers, while contiguous sections may be quite sickly.

So many other affections appear to be dependent, as it were, upon the susceptibility engendered by the malarial cachexia, that it may be regarded as decidedly healthy wherever experience determines the absence of malaria.

While it is my opinion that Florida is probably the most healthy of the Southern States, yet I think it is a weak enthusiasm to conclude that Florida is the healthiest country on the face of the wide

world. It would be strange, indeed, if her fertile swamps and hammocks did not generate fevers. It has been proved, however, that on her salubrious sea-coast almost immunity from fever may be enjoyed; and it is high praise to say that, if the bane exists, a way of escape is within easy reach of those who select Florida for a home.

A DISCOURSE

ON

BLOODLETTING CONSIDERED AS A THERAPEUTIC AGENT.

By

S. D. GROSS, M.D., LL.D., D.C.L. Oxon.

A DISCOURSE ON BLOODLETTING CONSIDERED AS A THERAPEUTIC AGENT.

I DESIRE to engage the attention of the Association, with a view of offering some remarks upon one of the lost arts of the profession. I allude to bloodletting considered as a therapeutic agent. If, in what I am about to say, it shall be my good fortune to make a few converts to the opinions which I have been led to form upon the subject, and, above all, induce this assembly of eminent men, to revise and extend their knowledge of it, I shall not only be greatly rejoiced, but feel that the time devoted to its preparation has not been misspent.

How much this agent has been neglected, nay positively ignored, by the profession during the last thirty years, is too well known to require any comment; how much it was formerly abused is equally a matter of record, if not a lasting shame. Regarded for a long time as the great, if not indispensable, element in the treatment of inflammation, it has gradually sunk so low in the estimation of practitioners that few, if any, have the courage even to hint at its necessity, much less to employ it, lest they should alarm their patients, and thus bring upon themselves public odium. If, now and then, one is bold enough to bleed, he is sure to be taken to task about it, if he is not actually denounced as a murderer.

When a remedy, once so popular, and regarded for nearly 2000 years by the most eminent and enlightened men as so essential to success in the treatment of disease, has fallen into utter desuetude, it behooves us, especially the older members of the profession, to pause, and to inquire seriously whether there is not something wrong in all this depreciation; whether we have not fallen into the opposite error, and condemned a remedy which, if judiciously employed, is capable of doing vast good. Extremes are always dangerous, and certainly nowhere more so than in the practice of medicine. We may well ask ourselves the question, "Watchman, what of the night"? for every one must perceive that it has a

broad and profound meaning here. If the modern practice be right, then the old practice must have been wrong, deadly wrong; and in so far at least we must be wiser than our fathers, and entitled to the gratitude of mankind for our superior knowledge and skill. As a young man I well remember that every physician was accustomed to carry a lancet in his pocket, ready for use in any emergency, however unexpected. It was an inseparable companion. In every large city of the Union there were certain men who followed bleeding, leeching, and cupping as a specialty. How the matter now stands everybody knows. The lancet is an obsolete instrument, the office of the bleeder has departed, venesection has long been unfashionable, and few of the present generation of medical men would, if called upon, be able to open a vein in a scientific and creditable manner. Bloodletting, as I have already declared, is, emphatically, one of the lost arts.

How this extraordinary change in sentiment and practice was brought about, by what influence, agency, authority, philosophy, logic or mode of reasoning, is a matter worthy of brief inquiry. The causes, so far as they are patent to my mind, are mainly four: first, the influence or tyranny of authority soon passing into more or less extensive fashion; secondly, the indiscriminate employment of the lancet in the days of what has been termed, not inappropriately, the Sangrado practice; thirdly, a more accurate knowledge of the nature and seat of diseases; and, lastly, the use of certain remedies, unknown a third of a century ago, but now of general, if not universal, resort, in the treatment of inflammatory affections.

1. The influence of authority annually slays millions of human beings. Its pernicious effects upon human life, in its individual and collective relations, are seen and felt in every direction; in the construction of our dwellings, in our habits and occupations, in our dress, in our social entertainments, in our amusements, in our food and drink, and in a thousand other ways. Of its malign influence in our profession examples daily fall under our observation, as the result of pernicious doctrines and practices. Superstition and fanaticism have kept the world in a state of intellectual bondage from the earliest records of society down to the present moment. The spiritism of the present day had its counterpart in the witchcraft of three centuries ago, fortunately without the hangman's halter. Every age has its peculiar absurdities, characteristic of the minds of some of its people. Mesmerism deluded thousands of persons. The metallic tractors of Perkins enjoyed for a time a

world-wide notoriety. Homœopathy is still at work in deluding people. Clairvoyance has many devout adherents. Berkeley, in the middle of the last century, effected many wonderful cures with the aid of his tar water. For upwards of one hundred years the lancet enjoyed unlimited sway. Everybody was bled. Surgeons during the last dozen years have had carbolic acid on the brain as a dressing in wounds and other injuries. Broussaism, Cookeism, and the blue pill of Abernethy each had a reign of at least a quarter of a century. For an equally long period the medical mind of Italy was agitated by the tartar-emetic treatment of Rasori and his followers. Thompsonianism, or the lobelia and Cayenne pepper treatment, is not yet entirely extinct on this continent, although its days were numbered long ago. For nearly a third of a century the doctrine of a change of type in disease has tyrannized over the minds of medical men, and exerted a controlling influence upon their practice. Of all these delusions, the latter, often called Toddism, after Dr. Todd, its author, has exercised the most perversive and baneful effects upon civilized society. Ensconsing itself behind a false position, it has literally enslaved the medical world, entrapping alike the wise and the foolish, and sweeping over human life with a force equal to that of the most destructive hurricane. Unlike the doctrine of sthenic and asthenic diseases of Dr. John Brown, of Edinburgh, who, in the latter part of the last century, enjoyed such a wide celebrity as a medical reformer, it assumes that all maladies are of a low type, imperatively demanding the use of stimulants for their successful management. It countenances no half-way measures. The patient must be upheld by stimulants or he must die. Now and then, perhaps, a few leeches may be tolerated, but only in very exceptional cases, where there is not much depression of the vital powers. Who and what Dr. Todd, the author of this system of medicine, was, it would be needless to inquire. Everybody knows that he was one of the ablest writers and clinical teachers which this century has produced; but that he was a profound thinker I doubt, and it is well to bear in mind that the patients at King's College Hospital, London, of which he had charge, were persons in the lower walks of life, broken down by overwork, privation, and various forms of intemperance, and therefore unable to bear depleting remedies. Such patients as Dr. Todd had are to be found in the wards of every eleemosynary institution in Europe and in this country. It was from a study of this class of cases that this

famous man, in an evil hour, deduced the absurd doctrine of a change of type in disease; I say absurd, for if there ever was any thing absurd this doctrine most assuredly deserves that name.

Who that has any knowledge of the human constitution as it is daily met with in our intercourse with our fellow-citizens, in the various pursuits of life, will lend credence to such an idea, I had almost said, to such a slander? I assert, without the fear of successful contradiction, that man's power of endurance in health and disease is not one particle less than it was fifty years ago, when depletory measures, of every form, were the order of the day, when, in fact, it would have been deemed derogatory to a physician's character to let a patient die without the aid of such remedies. The exploits performed during our late terrible war alone are sufficient to settle this question. Never, since man battled with man for national supremacy, were there so many rapid, laborious, and brilliant marches executed in so short a time as there were on both sides of the line. The exploits of the soldiers of Alexander, Hannibal, Cæsar, and Bonaparte fade into comparative insignificance by the side of those of some of our generals. Our laborers, farmers, miners, hewers of wood and carriers of water, mechanics, artisans, and professional men evince no evidence of decline in muscular power or mental endurance. Our sailors are as hardy a race of men as they were in the days of Sir Francis Drake or Captain Cooke.

If we look at the habits and modes of life of the people at the present day it will be found, if I do not greatly err, that they do not differ in any essential manner from those of a third of a century ago. The different classes of men and women, in city and in country, live very much as they did in my boyhood, using the same kind of food and drink, pursuing similar occupations and amusements, and exercising as much control over their appetites and passions generally as their fathers and mothers did. If there are any differences in any of these particulars, they are certainly not well marked, or so radical in their character as to diminish, in any material degree, the power of endurance of our people in health and disease. On the other hand, owing to the more extensive cultivation of our soil, the destruction of our forests, the draining of our marshes, and the greater attention paid to the study of hygiene, our people, especially those in the rural districts, are much more exempt from the diseases caused by the noxious exhalations from the earth's surface, so prevalent in newly settled countries, and so

pernicious in their effects upon the constitution, than they were in the early days of my white- and bald-headed contemporaries.

Do not men during accidents and surgical operations, and women during parturition, often lose enormous quantities of blood, and yet frequently make excellent recoveries? In epistaxis, hemoptysis, and hematemesis, this fluid is often largely poured out, and yet it is seldom that we hear of a person dying from the effects of its loss.

In the face of such facts as these, and a hundred others that might be adduced if time permitted, the doctrine of a change of type in disease must fall to the ground as utterly untenable.

The influence of fashion is not limited to our profession. We all recollect how the crinoline of the French Empress, invented to conceal a condition of which most ladies are so proud, enslaved the female mind, until every woman, married and single, considered it as an indispensable article of dress. A sofa, however spacious, was hardly long enough for a woman thus arrayed to sit upon. How the fashion has changed within the last six or eight years is familiar to everybody. Now the dress is so narrow as to show the outline of the person, and to compel the greatest care in progressing, lest the fair wearer should trip and tear her garments. Even diseases occasionally become fashionable. When Louis XIV. was laboring under anal fistule, this disgusting malady became at once the fashionable ailment of his debauched court. The use of enemata was cultivated as one of the fine arts in France in the time of Molière, who lashed the faculty without mercy for its follies and extravagances.

2. The indiscriminate employment of the lancet in former days did much to bring bloodletting into discredit, not only with the better thinking class of physicians but the public at large. "We cure the sick," says Gui Patin, a Professor in the Royal College of France, "when over eighty years old by bloodletting, and also infants of not more than two or three months, with as much success and as little inconvenience." Rush, the great champion of this operation on this side of the Atlantic, bled too, indiscriminately, I had almost said, remorselessly, at all periods of life, the young, the middle-aged, and the old, in all kinds of diseases, in the eruptive fevers, in fever and ague, in puerperal fever, in inflammations, in injuries, in hemorrhages, and even in anemia, often taking immense quantities of blood, and repeating the operation six, eight, or even a dozen times in the same patient. In short, he and his followers

used to bleed in every possible disorder until, in many cases, no more blood would flow because there was none left. That such practice would at length work out its own destruction is what might reasonably have been expected. It rang its own knell.

3. That we are much better acquainted with the nature and treatment of diseases than our fathers were, is a fact so universally accepted as to require no argument in its support. Our progress in this respect, during the last forty years, has simply been marvellous; and to nothing are we so much indebted for these improvements as to the study of pathological anatomy and histology, and the astounding developments of chemical science.

4. That the treatment of diseases has been greatly simplified within the period above specified is familiar to every member of the profession. Homœopathy, by the absurdities of its doctrines and primitive practices, long ago demonstrated to the world that most of its cures are effected spontaneously through nature's restorative powers alone, while the patient's mind is medicated with the decillionth part of a drop or a grain of medicine; and in comparatively recent years two eminent medical philosophers, Professor Bigelow, of Boston, and Sir John Forbes, of London, showed us by a series of admirably conducted observations that certain diseases, as smallpox, scarlatina, measles, typhus and typhoid fevers, are self-limited in character, and, therefore, not to be materially, if at all, abridged in their course by any plan or means of medication whatever. A third of a century ago the only so-called depressants, aside from the use of the lancet, were tartar emetic, calomel, and digitalis, the latter of doubtful efficacy in any case, and the first often exhibited without due discrimination. Of aconite and veratrum viride, now so universally employed as antiphlogistic agents, we were totally ignorant. These two medicines, as I shall endeavor to prove by and by, although frequently of immense service in the treatment of inflammatory affections, are incomparably inferior to bloodletting.

Believing that these are the principal, if not the only, reasons which have led to the abandonment of bloodletting as a therapeutic agent, I propose now to speak of the operation itself, and to point out, first, the classes of diseases to which it is more especially applicable; secondly, the period at which it should be performed to yield the greatest amount of good; and, lastly, its mode of action.

Blood may be abstracted in different ways; as, first, by venesec-

tion; secondly, by leeches and cups; thirdly, by incision, scarification, or puncture; and, fourthly, by arteriotomy. The latter operation is so difficult of performance that few practitioners are willing to attempt it. There are cases, as in violent inflammation of the brain, eye, and ear, in which it is supposed to exercise a peculiarly beneficial influence; but, generally speaking, it is quite certain that venesection, if properly executed, answers every purpose, even in the affections here specified. Similar remarks are applicable to bleeding at the jugular vein, also usually a difficult and, sometimes, even a dangerous operation.

The diseases to which bloodletting is more particularly applicable are the different inflammations, acute and chronic, general bleeding being best adapted to the former, and local to the latter. Hippocrates and his immediate followers bled largely in pneumonia and pleurisy; and Sydenham, Rush, Louis, Drake, and many others, often took immense quantities of blood in the treatment of these maladies. In acute inflammation of the eye, in robust subjects, bleeding is often indispensably necessary to save the affected organ. Who would hesitate to draw blood largely, under similar circumstances, in acute inflammation of the brain and its envelopes, in acute pericarditis or endocarditis, in hepatitis, splenitis, gastritis, enteritis, peritonitis, cystitis, metritis, or orchitis? Stricture of the urethra would be much less frequent if young men, laboring under severe gonorrhœa, were freely bled at the beginning of the attack In traumatic affections of the joints, unattended with loss of blood or severe shock, the abstraction of blood would often prevent anchylosis, so common under the present system of treatment. The spasm, which is so often present in recent fractures, especially in those of the leg and thigh, is more readily controlled by venesection, followed by a hypodermic injection of morphia, than by any other agent I have ever tried.

In chronic inflammation bloodletting is often an indispensable remedy. Even the most ultra advocate of the stimulant method of treatment will not hesitate to employ it when destructive action is gradually, but surely, undermining structure and function. The abstraction of five, eight, or even ten ounces of blood in chronic pneumonia and pleurisy, especially when associated with severe pain and obstructed respiration, often acts like a charm, relieving suffering, and promoting the beneficial action of other measures. In chronic ophthalmia a few leeches, applied to the forepart of the temple, on a line with the commissure of the eyelids, frequently

produce the happiest result. But I will not consume your time by an enumeration of the different cases of chronic inflammation in which bloodletting might be advantageous. What I have said respecting the lungs, pleura, and eye, is equally applicable to other structures, and needs no further elucidation here.

It requires no labored argument to show that general bleeding can be successfully practised only at the beginning of an acute disease, or during its earlier and gravescent stages. Performed at a later period, when the morbid action is fully established, and the affected tissues are inundated with inflammatory deposits, it cannot fail to do harm by robbing the system of the strength so much needed to carry on its vital processes. A copious bleeding at the onset of a violent inflammatory disease is gold; at its height, lead; or, to express myself more clearly, life in the one case, death in the other.

Secondly, to draw blood to the greatest possible advantage, the quantity should be measured, not by ounces but by the impression it makes upon the system, as denoted by the pallor of the countenance, the reduction of the heart's action, the softened state of the pulse and skin, the abatement of pain and of other symptoms, as headache, thirst, and restlessness, so universally present in all severe inflammatory attacks. To insure this result in the most speedy and decided manner, the blood should be drawn from a large orifice in a large vein at the rate of two and a half to three ounces in the minute, while the patient is in the erect or semi-erect posture. If the body be recumbent during the operation a much larger quantity of blood will be required to be drawn to produce the desired effect than when the reverse is the case. While, therefore, the bleeding should be spoliative, care should be taken not to waste the fluid unnecessarily.

To prevent undue reaction after the operation, the bleeding should not be carried to complete syncope, but merely to an approach to this condition, the effect of the operation being carefully watched by a reference to the countenance and the pulse, lest it should exceed the proper limits, and thus do harm instead of good. Violent reaction, however, in any case, after the abstraction of blood, may generally be effectually prevented by a full dose of some diaphoretic anodyne, as ten grains of Dover's powder with the one-fourth of a grain of morphia, given immediately after the operation.

Respecting the repetition of the operation, every case must, so

to speak, make its own rules. If, after a very copious bleeding, the symptoms rapidly reappear in all, or nearly all, their former intensity, the operation should at once be repeated either by re-opening the original orifice or by selecting another vein. In urgent cases, as in violent pneumonia, pleurisy, peritonitis, cerebritis, or endocarditis, the operation may often be repeated several times in rapid succession. Under such circumstances, the practitioner must, like a wary general, make forced marches, and follow up his successes, not waiting until the enemy has reintrenched himself behind his works, but strike heavy blows while he has the opportunity.

But I shall be told that such heroic treatment must inevitably induce serious debility. I grant it will; but in turn I ask, will the disease, if neglected or permitted to progress, not also cause debility—debility, perhaps, of the very worst kind, debility from overaction of the heart, imperfect supply of nerve fluid, deranged circulation, impaired function of vital organs, and, above all, from disordered structure from inflammatory deposits? The enlightened practitioner bleeds to save tissue, and to prevent the morbid action from running riot. He repairs strength, when the time for it arrives, by making blood with nutritious food and drink, and thus speedily sets the machinery of life again in motion. The timid, hesitating practitioner, the opponent of bleeding, on the contrary, although he may employ the same restoratives, uses them inopportunely, and thus allows the debility caused by his treatment to linger for an indefinite time, provided the patient is so fortunate as to survive the first onslaught of his disease.

Before I proceed to speak of local bleeding, let us briefly inquire into the mode of action of venesection, or, in other words, how the removal of blood from the system affords relief in inflammatory affections? This question can be easily answered. In the first place, the abstraction acts spoliatively, diminishing, as the name implies, the quantity of blood both in the part and system; secondly, it weakens the powers of the heart, and thereby prevents it from sending the blood with the same force and velocity into the suffering structures; thirdly, it unlocks all the emunctories, and thus promotes secretion; fourthly, it disgorges the vessels at the seat of the disease, restores the circulation, and places the absorbent vessels in a better condition for the removal of effused matter; and last, but not least, it favors the action of other remedies, such as purgatives, diaphoretics, diuretics, and anodynes.

But it will be said that all those effects may and can readily be induced by the agency of other remedies, such as aconite, veratrum viride, digitalis, mercury, and tartar emetic, and that, too, at much less cost to the system. That these articles are powerful depressants, lowering the heart's action, and promoting secretion, no one at all acquainted with their virtues will question; but I deny that they exercise the same beneficial impression upon the vessels at the seat of the inflammation. When blood is drawn freely from a large vein at the bend of the arm, from a large orifice, to an approach to syncope, the vessels at the seat of the morbid action are unloaded, often to such an extent that the affected structures do not exhibit any marked difference in color from those in their immediate vicinity. Thus, for example, in violent conjunctivitis the mucous membrane, the seat of the disease, always, under such circumstances, presents a perfectly blanched appearance, however red and engorged it may have been the moment before. Now what occurs in the eye, in such a case, may reasonably be supposed to take place in every other part of the body when a patient is bled to a similar extent. In pleurisy one of the immediate effects of the copious abstraction of blood is a mitigation of the torturing pain which forms so prominent a symptom in this disease, due evidently to the diminished calibre of the vessels in the pleura, previously in a state of complete repletion. Has any one ever witnessed such an effect from the exhibition of aconite, digitalis, veratrum viride, or tartar emetic? Never. No matter how these articles may be administered, whether singly or variously combined, they are simply depressants, not depressants and evacuants, as the abstraction of blood from a vein or an artery; there is no blanching of tissue from their use; no unloading of distended and crippled vessels; indeed, no appreciable effect of any kind.

The more recent researches in pathological histology furnish a hint not easily to be mistaken, as to the most salient treatment of inflammation in its earlier stages. The leading indication is to restore the paralyzed capillaries to their normal tonicity, so as to prevent structural changes in their walls, and facilitate the outward passage of the white globules with which they are choked. It is now well known that in every inflamed area there is marked hyperemic distention of the bloodvessels, which are often crowded to their utmost capacity with leucocytes, which emigrate through the vascular walls, and, in conjunction with the effused blood-liquor, constitute the most important elements in inflammatory deposits.

Hence the object of treatment should be to restore the capillaries to their normal calibre, through the artificial induction of contraction of their walls, an effect which can be brought about, as is daily witnessed in many of the external inflammations, by cold applications, which, as is well ascertained, produce reflex contraction of the vessels. In inflammation of the more deeply-seated organs and tissues, however, this object can only be attained by spoliative bleeding, whereby the affected capillaries are relieved of their contents. In this way only can their tonicity be restored, the further effusion, or migration, of cell-elements restrained, and the absorption of existing deposits favored.

Another effect of bleeding, not to be overlooked in this discussion, is the diminution which it causes in the quantity of fibrin and white globules, so remarkably augmented in inflammatory affections. This change, of which I have witnessed many examples, was beautifully illustrated in the case of a young man, nineteen years of age, whom I attended along with the late Dr. Charles Woodward, of Cincinnati, on account of a severe attack of pleurisy. Blood was drawn on three consecutive days, the first bleeding being performed about thirty-six hours from the commencement of the attack. The fluid, amounting to nearly a quart, was not only greatly buffed but cupped on both sides of the crassamentum, as is shown in the specimen which is still in my possession. At the second operation, the fluid was buffed but not cupped, and at the third it was merely a little sizy, all pain and active inflammation having by this time disappeared. If such effects follow the use of the articles above mentioned, I am uninformed of the fact.

In leeching and cupping, blood may be taken directly from the affected structures, or indirectly, as when they are practised at a distance from the seat of the inflammation: in the latter case the effect, if carried to a great extent, is similar to that produced in venesection, but generally much more tardy, and, therefore, in the main, not so efficacious. When the tissues are divided, as in incisions, scarification, or puncture, the vessels are directly drained of their contents, an operation often followed by great, if not permanent, relief. Illustrations of the efficacy of this mode of depletion are daily witnessed in tonsillitis, in erysipelas, ulcers of the extremities, inflammation of the uterus, and impending mortification, not to mention other affections.

I have said that general bleeding can be successfully practised, only at the beginning of an inflammatory attack; a fact which, I

repeat it, is not to be lost sight of in weighing the propriety of such a procedure. Let it be borne in mind also that bleeding is not to be practised indiscriminately, but judiciously, and with proper regard to the condition of the system. Our fathers grievously erred, because they bled in every stage of disease, and in all states of the system, the plethoric and the anemic, the strong and the weak. Of course there were exceptions, but as a rule this was the practice; hence the harm, and hence, as a natural consequence of the abuse, the abandonment of the treatment. It is within the recollection of all the older members of this Association, when the practice of medicine in this country and in Great Britain was, in great degree, limited to the lancet, calomel, digitalis, opiates, and tartar emetic, with gruel and chicken broth, as the chief diet during sickness. I well remember the time when the use of cold water was interdicted as highly improper, especially in the treatment of the so-called eruptive fevers, and when ventilation of a sick man's chamber was considered as fraught with danger. Bleeding will again come into fashion; history constantly repeats itself, and knowledge runs in a circle. No sensible man can fail to read the signs of the times; but it will not be indiscriminate bleeding, but bleeding performed for a reason, early, and, if need be, freely, to save tissue, and promote resolution; in the robust and plethoric, in the young and middle-aged, not in the weak, the anemic, the intemperate, the broken-down, and the decrepit. Practitioners during the last third of a century have labored under a delusion and a dream, from which they are gradually emerging to a sense of their duty; and, although I am not a prophet or the son of a prophet, I venture to predict that the day is near at hand, if indeed it has not already arrived, when this important element of treatment, so long and so shamefully neglected, will again become a recognized therapeutic agent, and will thus be instrumental in saving many lives, as well as many an eye, many a lung, many a joint, and many a limb.

But bleeding should not be restricted to the treatment of inflammatory diseases. There are other affections in which it may often be practised with the greatest benefit. In puerperal convulsions, attended with a plethoric condition of the system, copious venesection, promptly followed by the administration of a full anodyne, either alone or in union with chloral and bromide of ammonium and the application of leeches to the temples and cold to the head, is the sheet-anchor of our hopes, a positive sine quâ non to success. An experienced and learned member of this Association, Dr. J.

Fordyce Barker, recently recalled attention to this subject in a paper characterized by strong sense and great practical acumen, worthy of his high position as an accomplished gynæcologist. I believe, indeed, that the practice thus set down is the one now generally, if not universally, adopted in the treatment of this dangerous disease, as it was in the time of Dewees and his more enlightened contemporaries. In certain forms of apoplexy the judicious employment of the lancet cannot be too strongly insisted upon, especially in comparatively young and vigorous subjects. Blood in this disease is often taken with leeches when it ought to be drawn with the lancet. In asthma bleeding is frequently of inestimable value, in relieving engorgement and spasm of the lungs, the causes of the terrible dyspnœa so often present in the more aggravated forms of the disease. I recall to mind the case of a lady who was the subject of asthma from the age of fourteen up to that of eighty-six, when she died of pneumonia, whom I repeatedly bled with the greatest advantage in attacks of this kind, which nothing else could relieve. In another case, that of a tall, slender gentleman of this city, nearly eighty years of age, in which a severe attack of asthma was complicated with great congestion and slight inflammation of the lungs, the abstraction of less than ten ounces of blood by the lancet led to speedy convalescence and to a complete cure. I verily believe that if this gentleman had not been bled he would have died. In certain forms of phthisis, venesection, judiciously employed, is frequently productive of great benefit. I allude more particularly to the chronic variety of the disease, kept for years in abeyance by great care and a properly regulated regimen. I remember the case of the late Mr. Benjamin Drake, of Cincinnati, a brother of the great professor, who labored for many years under disease of the lungs associated with tubercular deposits, the more urgent symptoms of which were always promptly relieved by the loss of eight to sixteen ounces of blood by venesection. I have always felt satisfied that his life was materially prolonged by this treatment. Dr. Rush was in the habit, as Sydenham had been before him, of bleeding in every case of phthisis attended with a hard pulse, or a pulse rendered weak by the laborious transmission of blood through the lungs. In one of his cases he bled eighteen times in two weeks, and in another fifteen times in six weeks, with the happiest effect. I do not cite these instances as examples for our imitation, but simply to show that a system, borne down by

disease, may react favorably under what to us of the present day appears as a most heroic measure.

Forty years ago it was customary in protracted labor, dependent upon rigidity of the uterus and of the perineum, to bleed in order to relax the parts and expedite the expulsion of the child. Dewees, in such cases, often took large quantities of blood, especially in young, robust primiparous women, and occasionally even repeated the bleeding. I well remember that this was the general practice for a number of years after I entered the profession. Why it has fallen into desuetude it would be difficult to tell. The abstraction of blood, under such circumstances, was always followed by the exhibition of a large anodyne, under the influence of which the labor usually progressed rapidly to a favorable issue, without subjecting the poor woman to undue torture, the danger of lacerating the perineum, or the necessity of applying the forceps, the use of which is now so common among all classes of accoucheurs.

The plethoric condition of the system, so frequently met with in young, robust pregnant women, is generally promptly relieved by the abstraction of twelve to fifteen ounces of blood; and certainly there is no more rational remedy in such circumstances, especially when redundancy of blood is accompanied by dizziness, vertigo, or headache. Thirty years ago there were few women who were not bled once or twice during utero-gestation on account of these symptoms, and I do not know that I ever heard of one that was injured by the practice.

Certain forms of hysteria and epileptic convulsions, dependent upon congestion of the nervous centres, and a redundancy of blood in the system, are generally materially benefited by venesection. The relief in the former of these affections is often prompt and permanent, as I can testify from personal experience.

In the convulsions of infants bloodletting is frequently of signal service. In that form of the disease which follows upon the more severe attacks of cholera, so rife in our hot summer months, and which are manifestly due to over-excitement of the brain, as is shown by the excessive heat of the head, the flushed condition of the countenance, the suffused eye, the intense thirst, the incessant restlessness, the intolerance of light and noise, and the twitching of the muscles, the abstraction of two to two ounces and a half of blood from the arm in a child from one to two years of age, not only in many cases promptly arrests the vomiting and other

distressing symptoms, but protects the brain from more serious mischief, and thus places the system in a condition for speedy convalescence.

In what is called hay fever a good bleeding sometimes affords immediate alleviation of all the disagreeable suffering incident to that complaint, as dyspnœa, violent sneezing, nasal catarrh, tension in the frontal sinuses, headache, and horripilations, or chilly sensations along the course of the spine. I recollect one case which came under my observation, many years ago, in a clerical gentleman thirty-three years of age, who, on being largely bled one Sunday soon after the close of his religious services, was completely cured for that season; and, although the malady recurred during several consecutive summers afterwards, the attacks were always comparatively light.

Cases have been related of great benefit afforded by bleeding in uremic coma, attended with unconsciousness, dilated and fixed pupils, convulsions, a highly albuminous condition of the urine, and excessive prostration of the system. The blood at first issued feebly, but gradually the stream increased in volume. The fluid assumed a brighter hue, the pulse rose, the convulsions ceased, consciousness returned, and the patient finally made an excellent recovery. Several such examples will be found recorded in the London Medical Times and Gazette for September, 1874, by Dr. Benjamin W. Richardson, in an article "On Bloodletting as a Point of Scientific Practice," and are worthy of special study.

This spring twelve months ago I was requested to visit a lady, a stout, muscular person, in robust health, upwards of forty years of age, who for several years past had suffered much from attacks of headache, attended with dizziness and occasionally also with vertigo. She had tried various remedies without benefit. I suggested bleeding, to which she at once assented, and I drew fully three half pints of blood, with immediate and permanent relief.

Surgeons, the world over, draw blood after severe reaction in concussion of the brain to prevent inflammation of that organ and of its membranes. The more plethoric the patient the greater the necessity for such interference; but the operation should by no means be restricted to this condition, as it is often of great value, if timeously performed, in comparatively anemic subjects. It was a case of concussion of the brain that gave rise to the never-to-be-forgotten conversation between John Hunter and his pupil, Dr. Physick, at the time resident physician at St. George's Hospital, London. A man laboring under concussion of the brain

from a fall from a scaffold was brought into the surgical ward in a state of utter unconsciousness. "What shall I do?" said the pupil to his master. "Shall I bleed him?" "Bleed him? Bleed him, sir? No, sir; you would kill him outright. Wait, sir, until he reacts, and then bleed him—bleed him to death, sir."[1] In compression of the brain from fracture with depression of bone and compression from exhaustion of blood, the abstraction of blood by the lancet and leeches is frequently resorted to for the purpose of securing cerebral accommodation; and the practice, as is well kown, is often followed by the most gratifying results.

We all have, at some period or other of our lives, experienced the torturing, racking pains in the back and limbs so common in bilious remittent and intermittent fevers, as if the body were about to be broken in two, causing us to turn and toss about almost incessantly in search of ease, the head being generally at the same time terribly distressed, the skin hot and dry, the thirst intense, and the heart in wild, tumultuous motion. Who that has ever been freely bled in such a condition of the system does not remember with grateful feelings the prompt alleviation afforded by the operation? The application of a dozen wet cups to the aching back has often speedily transported the poor patient, as it were, from torment into Elysium. In gout and rheumatism the abstraction of blood is frequently of immense benefit, if not as a direct curative agent, as a means of relieving pain, and thus paving the way for the more successful action of other remedies. The passage of renal and biliary calculi is often greatly expedited and the suffering caused by it much alleviated, by a copious bleeding, especially in stout, plethoric subjects. But I must stop, for my remarks have already been extended far beyond my original design, which was simply to point out a few of the more prominent diseases in which, in my humble opinion, this much neglected but most valuable therapeutic agent may be advantageously employed.

The fate of bloodletting teaches us an important lesson, not at all calculated to elevate our pride as men intrusted with the preservation of the health and lives of our fellow beings. It shows what little faith there is to be placed in human judgment, and how sadly we are influenced by authority and fashion in a matter pertaining to the dearest interests of society. If I wished to be satirical, I should say that there are in our profession, as

[1] Dr. Charles D. Meigs, in Pennsylvania Hospital Reports, vol. i. p. 27, 1868.

there are, indeed, in every other, two distinct classes of men, the thinking and the non-thinking. The former, whose number is exceedingly limited, accept every novelty or great and sudden change with suspicion, wisely concluding that the one ought not to be adopted until it has been fairly tested by well-conducted observation and experiment, and that the other should not be rejected without sufficient cause. The non-thinking man, on the contrary, eagerly lays hold of every novelty, and seldom stops to seek a reason for his new faith. He adopts it simply because his neighbor adopts it. Especially is this the case when the novelty, whatever it may be, has a distinguished parentage, as when it has received the sanction of a great name, or, perchance, if it had a transatlantic origin. Jones, Robinson, or Brown in Europe is always a greater man, indeed far greater, than his namesake on this side of the water. The non-thinking man confounds progress with improvement. He does not weigh the pros and cons of a question; he takes a shorter route; sees things in a distorted light; assumes for granted things that he cannot comprehend; and jumps at conclusions. As the sheep follows the wether so he follows his master, looks through his spectacles, believes in his infalliibility, and swears by his authority. The more the assertion borders on the marvellous the more greedily does he gulp it, so much easier is it to assume the truth of a proposition or statement than to prove it by sound, logical argument and inductive reasoning. I think I am not guilty of exaggeration in what I say. It really seems to me as if we were bereft of our senses. No sooner is a new remedy, a new operation, or a new method of treatment introduced to notice than it is puffed into gigantic proportions, and invested with virtues as foreign to it as any other folly under heaven. Certain it is there never was any greater need for deliberation and reflection, than there is at the present time; greater need of asking ourselves, "Watchman, what of the night"?

MEMOIR OF HENRY MILLER, M.D.

MEMOIR OF HENRY MILLER, M.D.

HENRY MILLER was born in or near the town of Glasgow, in Barren Co., Kentucky, on the first day of November, 1800, at a time when there were but few inhabitants in that part of the State, then, as now, known as the Green River country, his father, Henry Miller, Esq., having been one of the first three settlers of the village.

He never had the advantages of a collegiate education, but at the village and country schools acquired a good knowledge of the English, to which he supperadded the study of Latin, logic, and metaphysics. At seventeen, he commenced the study of medicine under the tuition of Doctors Bainbridge and Gist, whose practice extended over a vast area of country. The scarcity of apothecaries and dentists in those days made it necessary for physicians to compound their own medicines, and pull teeth for all who required it. Bleeding, too, was then greatly in vogue, and in many instances patrons of physicians made regular visits to the doctors' "shop" to have a pint or a quart drawn, just as their condition seemed to demand. In this way Henry Miller became first practically interested in medicine, and filled the place of chief pharmaceutist, dentist, and bleeder for his county. At the age of nineteen he travelled on horseback to Lexington, Ky., and attended the first full course of lectures ever delivered in the Medical Department of Transylvania University. On his arrival at this new and the first fountain of medical instruction in the great West, he was one of a band of less than forty students assembled to listen to medical lectures. At the end of this course, he returned to his home and was taken into partnership by his senior preceptor (Dr. Gist having removed to New Castle in Henry County). Thus occupied until the fall of 1821, he returned to attend his second course of lectures, and in the following spring received the degree of Doctor of Medicine, offering for his inaugural thesis a paper on the "Relation between the Sanguiferous and Nervous Systems," which was replete with so much physio-

logical research as to prompt the faculty to publish it. After receiving his Degree, he returned to Glasgow to commence in earnest, on his own responsibility, the practice of his profession, with full assurance of success. The next session, however, of the Transylvania Medical School opened and ended with considerable dissatisfaction among the students as to the facilities afforded for the study of practical anatomy, and at the close of the session Dr. Miller was tendered the demonstrator's place. He accepted the offer, and at once went to Philadelphia, where he closely applied himself to dissecting, and in the fall returned to Lexington to begin his new duties. To his astonishment, he found Professor Dudley opposed to his appointment, and he had either to enroll himself as that gentleman's competitor or resign. He did not hesitate to determine on the latter course, and again he returned to Glasgow and resumed the practice until 1827, when he was induced to remove to Harrodsburg, in Mercer County, then the most popular watering place in the West. Here for nine years he engaged in a very extensive and laborious practice, acquiring a most enviable reputation, which led in 1835 to his being called to this city to aid in organizing a medical school for which a charter had already been obtained by a number of resident physicians. Unfortunately though, the corporators were the Professors in the school, and he at once saw that failure under such a state of things was inevitable, and very soon he had it so changed that the trustees should be from any rank or profession other than the medical. In this school, he accepted the Chair of "Obstetrics and Diseases of Women and Children" at a time when every prospect was gloomy and embarrassing, and most of his colleagues lukewarm and despondent. Nothing daunted, however, by all these discouragements, he believed Louisville was destined to be the great medical centre of the west for teaching, and to the accomplishment of this end his every energy was fixed. Transylvania at once saw the danger, and in him recognized a powerful opponent, and in a very short time all the Faculty of the last-named Institution, except Dr. Dudley, determined to remove the school to the Falls City. Then came Caldwell, Cook, and Yandell to unite their fortunes with the nascent Medical Institution of Louisville, which in time was merged into the Medical Department of the Louisville University. Up to 1858, Dr. Miller was uninterruptedly engaged as a medical teacher. At that time he resigned, and again for nine years devoted himself closely to a most lucrative practice. In

1859, at the meeting of the American Medical Association in Louisville, he was elected President of the Association. In 1867 he was again induced to take a special chair which was created for him in the University—the chair of Medical and Surgical Diseases of Women. In one year, he resigned this to take the same chair in the Louisville Medical College, which chair he held up to the time of his death.

Dr. Miller was not a voluminous writer, having written but two works. These were sufficient to make him widely known both at home and abroad, as an author of great power. The first of these was his " Theoretical and Practical Treatise on Human Parturition," the second and larger was his " Principles and Practice of Obstetrics." Besides these, he made occasional contributions to the "Western Journal of Medicine and Surgery," the "American Journal of the Medical Sciences," the " Richmond and Louisville Medical Journal," and the " American Journal of Obstetrics and Diseases of Women and Children." In all that he ever wrote there was originality of thought on every page.

As a practitioner, he was ever eminently progressive, and among the foremost in adopting improved methods of diagnosis and treatment. He was the first to use the speculum uteri in this city; the first to perform ovariotomy here; the first to use intra-uterine remedies; and the first to employ anæsthesia in midwifery. Up to his death he continued almost daily to use chloroform in every case of labor which came under his care, unless its use was positively forbidden by some peculiarity or condition of the patient, and died a strong advocate of its use, never having lost a patient or met with an accident therefrom. Of his first case in which he used it, he wrote that the patient was kept under its influence six hours.

His success in ovariotomy was five out of six cases, and yet he wrote that he regarded the operation with great aversion, and rather shrunk from than courted its performance, and expressed the wish that with him such cases might be few and far between.

It was written of him more than twenty years ago, that " it was but truth to say that he had acquired a reputation of which any man might be proud," that " it was not the result of trick or sham or artifice, of any of those acts by which men of smaller mould endeavor to catch and to retain the popular regard," that " it had its basis in those solid qualities of mind and heart, which will endure as long as humanity endures," that " it was the steady growth of

years spent in the conscientious pursuit of what was right and true in science and in the fearless discharge of the duties of life," that " during his long connection with medical schools, the breath of detraction or slander never dared assail him, either professorially, professionally, or personally. His colleagues one and all relied with entire confidence on his judgment and his sense of honor, justice, and propriety, and the students whom he taught, without exception, regarded him not only as a most able and instructive teacher, but ever as a friend and mentor." That " in this community, where he had lived and worked for a quarter of a century, there was but one opinion of his skill and sound judgment as a practitioner of medicine, and of his high qualities as a man." That " in his particular department of practice, he had been and was then without a living superior." That " he did not follow blindly what was recognized as authentic," that " he received nothing as true without having subjected it to the crucible of his own judgment, and with that frankness, and independence, and fearlessness which those who knew, will recognize as characteristic with the manhood that had marked his whole life," that " he did not hesitate to call in question opinions or doctrines which appeared to him unsound, no matter from whom they emanated," nor failed to give " reasons for the faith that was in him."

Such was the estimation in which he was held by the profession a score of years ago, and the years since then have but served to more firmly impress all who knew him of its correctness. The flight of time did not efface one beauty of his character, nor in the slightest dim the brightness of his intellect. On the contrary, each year added brighter lustre to his name, and endeared him more closely to all who knew him.

On the 8th day of February, 1874, he died with Bright's disease of the kidney.

What more can be said of him than that, as a man, a citizen, a physician, a teacher, author, friend, he was faithfully tried and found to be fully true? Loaded with honors, and richly deserving them all, he lived, and when the summons came, he left us with a full assurance of a happy hereafter.

S. D. GROSS,
E. S. GAILLARD,
J. M. KELLER.

MEMOIR OF GEO. MENDENHALL, M.D.

MEMOIR OF GEO. MENDENHALL, M.D.

THE committee appointed at the meeting of the Association at Detroit, to report a brief memorial and resolutions expressive of the feeling at the loss of the late Dr. George Mendenhall, beg leave respectfully to present the following.

Dr. George Mendenhall, the twenty-first President of the American Medical Association, was born in Pennsylvania May 5, 1814, and died June 4, 1874, at Cincinnati, Ohio. While quite young, he removed with his parents to the State of Ohio. His early education was procured at the schools of the county where he resided. He began the study of medicine in the office of Dr. Benjamin Stanton, of Columbiana County, Ohio. He remained under his care for two years and a half, when he entered the Medical Department of the University of Pennsylvania, where he continued his medical studies until he graduated in March, 1835.

He still further perfected his studies by serving as one of the resident physicians of Pennsylvania Hospital. Returning West, he located in Cleveland, Ohio, where he continued to practise until October, 1843, having succeeded in securing a position as a successful physician and good citizen.

Owing to impaired health from the rigors of the climate, he removed to Cincinnati, where he continued to reside till his death, a period of thirty years. Like most successful men in the profession, he began his career in Cincinnati a stranger and in moderate circumstances. By dint of industry and honorable conduct, he soon succeeded in winning the good opinion of the public, as well as that of the profession. His business rapidly increased, and for the last fifteen years of his life his entire time was occupied. He was noted for his conscientious attention to all who placed themselves under his care. He allowed no pleasure or engagement to interfere with his obligations to his patients. Even when suffering physically, he did not spare himself and take the rest he so much needed.

While busy with the practical duties of the profession, he did not neglect those so necessary—the labors of the student. His early years were occupied in close study. In addition to the preparation of the student's *Vade Mecum*, which passed through several editions, he assisted in editing the *Western Lancet*, and afterwards the *Lancet and Observer*.

For several years after removing to Cincinnati, he was attached to a large Dispensary, and also lectured during the summer months in a preparatory medical school.

On the organization of the Miami Medical College of Cincinnati, in 1852, with the late distinguished Dr. R. Mussey at its head, he accepted the professorship of obstetrics and diseases of women. When the Miami School was consolidated with the Medical College of Ohio, he accepted the same chair.

On the reorganization of the Miami School in 1866 he resumed the duties of his favorite chair, and continued to lecture with great credit until a year before his death. For several years he was attached to the staff of the Cincinnati Hospital, having under his care all diseases of females. His clinical lectures were practical, and attracted a large attendance of students.

As a teacher in his didactic lectures, he was plain, practical, and accurate.

From his extensive experience in obstetrical practice, he gave great force and richness to his lectures.

As a practitioner he was noted for the soundness of his judgment and clearness in diagnosis.

He was an honest and a truthful man, faithful to his patients; upright and loyal in all his relations to his professional brethren. Patient, kind, and honest, he was never moved from the course he believed to be just and right.

He had a profound conviction in the power of the physician to prevent and cure disease. His respect and love for the profession were deep and abiding. He had no sympathy for those who knowingly degrade it by ignorance or charlatanry. In word and deed, he acted with those who upheld the science, the art, and the ethics.

The medical journals contain many valuable papers from his pen.

He was especially the friend of young men, whom he encouraged by kind words and good example.

Few men enjoyed the confidence and esteem of a larger number

of patients and of his profession, than Dr. George Mendenhall. He was a regular attendant at the meetings of this Association.

His health began to fail two years before his death, so that he was forced to withdraw from practice. In the hope of benefiting himself, he passed the greater part of the last year of life in Europe, without, however, any improvement.

While in London, he was elected an honorary member of the Obstetrical Society.

The disease of which he died, softening of the brain, gradually advanced after his return home.

Whereas, this Association has learned with profound regret of the death of Dr. George Mendenhall, one of its former Presidents, therefore, be it

Resolved, That in his death the American Medical Association has lost one of its most worthy and distinguished members.

Resolved, That a copy of these resolutions, with the cordial sympathy in their bereavement, be sent to the family.

JOHN A. MURPHY,
W. CARSON,
A. E. HEIGHWAY,
B. F. RICHARDSON.

REPORT

ON

AMERICAN MEDICAL NECROLOGY.

REPORT ON AMERICAN MEDICAL NECROLOGY.

BALTIMORE, April 29, 1875.

WM. B. ATKINSON, M.D.,

Permanent Secretary of the American Medical Association.

DEAR SIR: As Chairman of the Committee on Necrology, I beg leave respectfully to submit the accompanying Report to the Association through you, regretting my inability to present it in person.

It comprises memoirs received from the District of Columbia and from the States of Maryland, Missouri, New Jersey, and Virginia; for which I have to thank my associates on the Committee, Dr. W. W. Johnston, Dr. D. V. Dean, Dr. John Blane, and Dr. L. S. Joynes, and also Dr. Judson Gilman of Baltimore, who is not a member of the Committee. That the Report is not more extensive is due to the fact that no contributions have been received from other States than those above mentioned.

Respectfully yours,

S. C. CHEW, M.D.,

Chairman.

DISTRICT OF COLUMBIA.

JOSHUA RILEY was born in Baltimore, Maryland, on January 19, 1800. He came to Georgetown, D. C., at the age of 18, and was employed for some time as a clerk in a drug store. Acquiring a fondness for medicine, he decided to devote himself to its study, and after a term of pupilage under Dr. Clark, and attendance upon two courses of lectures at the University of Maryland, he graduated from this institution in 1824. He began the practice of medicine in Georgetown immediately after, and it was not long before his career became a successful one. His private practice soon became large and remunerative, and until the day of his death he continued to engage in the laborious duties of his profession. During the fifty-one years thus spent, he necessarily came in contact with a large number of persons both in his own city and in Washington, and it is safe to say that probably no man in the District of Columbia had so large a number of acquaintances and friends as Dr. Riley. In the intimate relations of physician and patient he proved himself in every way worthy of the high

confidence reposed in him and won the esteem of the entire community.

Dr. Riley's life, however, was not solely devoted to medical practice. From 1844 to 1849 he was engaged in lecturing as Professor of Materia Medica (a position now held by his son, Dr. John C. Riley) in the National Medical College, and was also active in the founding of the Washington Infirmary, the first clinical school in the District of Columbia. Several offices in the medical societies were at various times held by him. He was President of the Medical Association of the District of Columbia for several years.

The discretion and judgment which distinguished his character gave to him, through the choice of his fellow-citizens, several positions of trust. He was a member of the Board of Aldermen of Georgetown, of the Council of the Territorial Government, and, at the time of his death, was President of the Potomac Insurance Company.

In the numerous tributes paid to his memory by his brothers in medicine there was but one feeling, that of profound respect for his virtues, his high professional ability, and strict adherence to duty.

JOHN G. F. HOLSTON was born in the city of Hamburg, Germany, in the year 1809, and died in Washington, May 1, 1874, in the sixty-fifth year of his age. His father was a physician, and the son early acquired a taste for the profession. When quite young he came to this country, landed at New Orleans, and remained among the planters for about a year. At the end of this time he went to sea and visited the East Indies, China, and other Asiatic countries. On his return to the United States he landed at Philadelphia, where the cholera was then raging. Inspired with the desire to do good, he volunteered as a nurse in the cholera hospital, and here became first acquainted with the practical care of the sick. At the conclusion of this honorable service to humanity, he started on foot for the West, and while on the way was robbed and deserted by a companion. Thus bereft of money, he engaged as a laborer in a brickyard, but his superiority to the humble but cheerfully performed task was discovered accidentally through his offer to translate a puzzling passage for some students of Washington College. On the receipt of funds from home, he subsequently entered this College and graduated with high honors.

His medical studies were pursued at Cleveland, Ohio, and it was in this State that he began the practice of medicine. His success was considerable, especially in the department of surgery. In 1857 he became Professor of Surgery in the National Medical College in Washington. On the breaking out of the war Prof. Holston entered the army as surgeon of volunteers, but was soon promoted to the position of Medical Director on the staff of General Grant. His services here were highly appreciated.

At the conclusion of the war Dr. Holston returned to Zanesville, Ohio, and resumed practice, but at the solicitation of General Grant, on his assuming the Presidential chair, he took up his residence in Washington, engaged in private practice, and held a professorship in the Georgetown Medical College.

An attack of paralysis, two years before his death, unfitted him for further active labor, and after a long and painful illness he expired on May 1, 1874.

The position held by Dr. Holston among his brethren was one of prominence. He was considered a man of much learning and practical ability. As a linguist he possessed more than an ordinary knowledge of ancient and modern languages. He was an active member of the Masonic order, and held in high esteem by his pastor, who paid a glowing tribute to his memory at his grave. In private life his unusual benevolence, unselfish interest in others, and unvarying modesty of demeanor, while they gained for him no great worldly prosperity, secured for him an everlasting resting place in the hearts of many.

ILLINOIS.

GEORGE RICHARD BIBB was born June 28, 1842, and died at Jacksonville, Illinois, June 28, 1874, consequently on his 32d birthday.

Dr. Bibb was a medical student before the rebellion of 1861, and left the study for the battle field on the first call for troops, and remained with his command until their term of service expired. He was afterward promoted, and was attached to another command.

In 1864, he graduated at Rush Medical College, Chicago. He was at an early day in his professional life associated in practice with the distinguished Doctor David Prince, of Jacksonville, and subsequently with Dr. O. A. Gilman, of the same place. In 1869,

he was appointed by Governor Palmer a trustee of the Illinois Insane Hospital. Declining health induced him the same year to emigrate to California, and after a residence of a year near San Diego, he considered his health sufficiently restored to return. After a year's residence in Illinois, he concluded to go to Denver, Colorado, where he spent six months. Finding his health unimproved, he again went to California. This time his residence was Oakland, from whence after a brief stay he returned to Colorado, and spent some months at Manitaw.

Finally despairing of success in a perpetual conflict with disease, he returned to his home and his friends in Jacksonville, and died June 28, 1874, on his 32d birthday.

Dr. Bibb had such natural facility for acquiring knowledge as to make the study of medicine easy; this, with his high appreciation of the science, and his genial manners, rendered the practice agreeable and successful.

His early death from protracted phthisis, which was inherited, deprived society of a valuable citizen, and the profession of a member who would have become conspicuous.

Dr. Bibb was one of about thirty doctors who went aboard the old steamer Commonwealth, at St. Louis, on their way to New Orleans, to the meeting of the American Medical Association, in 1869. The late lamented Prof. Mendenhall was also one of the party, and none who were aboard but will remember that both these gentlemen contributed their full share to the enjoyment of that most enjoyable trip.

JAMES VAN ZANDT BLANEY expired on the 11th of December, 1874, at one o'clock in the morning, being in his 55th year.

His death is a shock to the scientific world, and a deep affliction to a wide circle of intimates and friends. The pulpit, the press, and the public have united to do him honor, and have laid their tribute on his tomb. After a life of distinguished service to truth and humanity, he sleeps well.

Dr. Blaney was born May 1, 1820, at New Castle, Delaware. He sprang from a good stock. His parents were gentlefolks, and their home was the resort of the distinguished men of that day. John M. Clayton, Judge Baldwin, and Dr. McClellan were frequent guests. The then youthful subject of this sketch was a delighted listener to their animated and polished conversation His native

love of truth and keen insight were quickened by association, and he was moved to a noble ambition.

He excelled in boyish sports, and keenly enjoyed them, but his thirst for knowledge was insatiable. While others were idle, he listened, and thought, and studied. He learned everything readily, and laid up great stores; but he preferred natural science, and devoted himself to it. He graduated at Princeton when only 18 years old, but remained there some months as a resident graduate, pursuing his studies under the distinguished Prof. Joseph Henry. He had already become a learned and skilful chemist, and had taken a survey of the kindred sciences.

From Princeton he went to Philadelphia, and studied medicine under the great masters there. He completed his course before he arrived at age, and perfected himself by practice in the hospitals. He also pursued his favorite science of chemistry in connection with Prof. Booth, afterwards director of the mint.

Early in the year 1843 he set out for the West, armed with letters to leading men in this region. He visited the Mammoth Cave, was a guest at Ashland, was stationed for a season at Jefferson Barracks, sailed up the Mississippi to St. Paul, and finally, in the fall of the year 1843, arrived at Chicago.

His work here was not done in a corner. He associated with the late Dr. Daniel Brainard in founding Rush Medical College. His first chair united Chemistry, Pharmacy, and Materia Medica, and the young man of 23 years proved an acceptable lecturer on all these topics. At the same time he engaged in the practice of medicine with ardor and success. His enterprises prospered, and his sphere of effort widened. He soon became a popular lecturer on scientific subjects, and delivered many courses of lectures before the Mechanics' Institute and other associations. He was an efficient member of the Board of Education, and was instrumental in building Dearborn school-house, the first permanent school building in the city.

In May, 1846, he organized an expedition to explore the southern shore of Lake Superior. He was accompanied by the late Dr. J. H. Bird, who acted as civil engineer. The result was the discovery of mineral deposits, which have since been mined to great profit.

Dr. Blaney was in active practice during all the cholera years, devoting his great skill to rich and poor alike. Night and day he pursued his errand of mercy, bringing healing to many.

He was the founder of the *Chicago Medical Journal*, and for

many years its editor. His treasures of knowledge were poured out to enrich its pages, and his name and influence aided in giving it a wide circulation. His services as an analytical chemist were constantly in request. His aid and opinion were sought by an army of inventors, miners, manufacturers, dealers. As a detector of poisons in criminal cases, he became "a terror to evil-doers, and a praise to them who did well."

The reader will remember the celebrated case of George W. Green. He was tried in Chicago on the charge of poisoning his wife, and was convicted on the testimony of Dr. Blaney. By the use of novel tests, the doctor found strychnine in the stomach of the murdered woman, and testified to it. He was critically cross-examined, but sustained himself. His analysis was published on both sides of the Atlantic, and was at first the subject of some adverse criticism. But he defended himself successfully, and won the assent of the scientific world. The criminal himself said to him: "Dr. Blaney, God guided your investigations!" and the same night the wretched man hung himself in his cell.

In a less conspicuous case of the same sort, Dr. Blaney was the means of saving life. An expert testified to the presence of arsenic in the stomach. Dr. Blaney was called for the defence, and overwhelmed the prosecution. After denying the presence of arsenic, he turned to the presiding Judge and said: "Your Honor, if the test of the gentleman is to be relied on, I can prove the presence of arsenic in the water your Honor is drinking." And he made good his point by applying the test to the water on the spot.

In labors like these, Dr. Blaney employed himself until about the year 1857. By this time his reputation had become national, and his name was known beyond the seas. He had received and declined many invitations to other fields of honor and influence. But, being invited to the chair of Chemistry and Natural Philosophy in the Northwestern University, at Evanston, he accepted, and removed with his family to that place. He was impelled to this step by the conviction that he could not with safety continue the general practice of medicine, and by his love of country life. He fitted up a beautiful home, and laid out on a sand ridge a garden marvellous for its floral display, and for the variety and excellence of its fruits and vegetables.

At the breaking out of the war of the Rebellion, he was summoned to Washington and entered the army as Surgeon, with rank of Major of Cavalry. Here his high qualities secured him places

of trust. He was for a year Medical Director of the Department of Virginia and North Carolina with headquarters at Norfolk, and was with General Sheridan at the battle of Winchester, having charge of the hospitals. He remained in the army until the close of the war, serving with zeal and winning promotion. Under his administration, ample provision was made for the sick and wounded, and no emergency found him unprepared. Upon the return of peace he resumed the duties which had been partially interrupted. He was solicited to practise as a physician, and consented to do an office business, and was called in consultation in difficult cases. He never resigned his chair in Rush Medical College, and he now resumed his regular courses of lectures. He was again an analytical chemist, and an authority in science. Upon the death of Dr. Brainard in the fall of 1866, he succeeded to the presidency of Rush Medical College, and wearing the harness while he had strength to endure, he pursued his career to the end.

In forming Dr. Blaney, nature was bountiful. He was above the middle height, of a lithe and graceful figure, crowned by a noble, well-poised head, and a face full of thought and feeling—a sensitive and kindly face, full of dignity and courtesy. In mind he was gifted beyond the common lot. His powers were disciplined and always in the field. A new thought found its appropriate place and was never in the way. He loved science and pursued it, and made it his own. He found—

> "tongues in trees, books in the running brooks,
> Sermons in stones, and good in everything."

His vivacity was wonderful. His graceful and appropriate gestures added an indescribable charm to his conversation and lectures.

He possessed a noble simplicity of character. He was truthful and just. He hated evil speaking, and guarded against it with jealous care. He was a model physician. His presence in the sick-room diffused sunshine and calm. He seemed to know by instinct, the disease and the remedy. Dr. Brainard once said, that when he could think of no remedy, he sent for Dr. Blaney, and added, "he always has something to suggest."

He never became insensible to the sufferings of others. After watching for a lifetime the "tide of human woes," he was as tender as ever. His eyes would fill with tears at a story of suffering He had, not long ago, for a patient, a little girl who had broken the

upper third of her thigh, and was in danger of being crippled for life. He did for her all that skill could do, and was completely successful. The restoration was complete. When the work was done and it was safe to remove her, his eyes filled with tears of joy, he took her in his arms and carried her to the carriage, drove her himself as far as she could safely go, and then brought her home in triumph.

His conversation was improving. Making no ostentatious display of knowledge, he brought from his storehouse "things new and old." He was gifted in anecdote and illustration. In his happy home, surrounded by his wife and children, he was genial and light-hearted, dispensing a graceful and refined hospitality.

In fine, he was a gentleman not of tinsel but of gold. He had sad hours, but on the whole a bright and happy life. Perhaps his sorrows are not to be deplored, for "sweet are the uses of adversity."

In his long illness, affection which never tired, watched beside him, and the Lord, as we trust, sent him the message of his love.

Dr. Blaney was widely known in the Masonic order, in which he had been honored with high positions. He was a Past Master of Oriental Lodge, in Chicago, and Past Commander of Apollo Commandery, Knights Templar; was the first Grand Commander of the Grand Commandery of Illinois; was Generalissimo, the third highest in rank of the officers of the Grand Encampment of the United States, and an honorary member, 33d degree, of the highest, or Scotch rite, Masonic organization. J. W.

DAVID O. MCCORD was born in Green County, East Tennessee, August 1, 1830. His parents moved to Edgar County, Illinois, during the year 1833, where the doctor lived until he graduated in his profession. He was a classic scholar before he attempted the study of medicine; he was a strict disciplinarian. He entered the office of Dr. John Tenbrook of Paris, Illinois, as a student, in the year 1851, and graduated at the Ohio Medical College in 1854; shortly after which, he moved to York, a small town in an adjoining county, where he did a successful and laborious practice until his death. He enjoyed an enviable reputation among his professional brethren, looking to the code of ethics of the American Medical Association as his guide, and practising its precepts to the letter. He was a man of decided ability, great energy, and industry. For many years he was a most acceptable member of the

Presbyterian Church, and an active member of it. He was taken sick while visiting a patient, and only lived a few hours after his return to his family. It is presumed he died of systemic congestion.

Dr. M. served as a surgeon during the late rebellion with great credit and usefulness.

He died in either June or July of 1874.

DELOS W. YOUNG, of Aurora, Kane County, Illinois, died Sept. 8, 1874, from cancer of the stomach. He was cut off in the 46th year of his life in the midst of great activity and energy, giving up his professional, official, and general business but three weeks before his death took place. His strong will and natural force of character kept him up till the stomach ceased entirely to receive or assimilate even the blandest articles of food. His activity, energy, and perseverance were qualities which commanded the admiration of all who knew him.

He was born in Montgomery County, in the State of New York, in 1829.

When about twelve years of age he with his parents emigrated to Illinois and settled on a farm near Aurora, where he remained and labored till the spring of 1849, when with very moderate acquirements as a common school scholar, he entered the office of Dr. Nicholas Hard as a student, serving as man-of-all-work about office, stable, and house, to pay his tuition and board.

The following winter he attended lectures at La Porte, Indiana, and here, as at home, his poor scholarship and oft-repeated blunders at "quiz" brought upon him raillery, reproachful nicknames, and much that was calculated to discourage a less dauntless spirit than he possessed.

But now appeared those splendid qualities of activity, energy, and perseverance which so distinguished and characterized him in all his after life and undertakings, and contributed so much to his final success.

He, nothing daunted by slurs and sneers of his more fortunate classmates, continued to try, seemingly stimulated to redoubled efforts by that which would discourage another.

He pursued his studies with such energy and zeal, and so won upon the sympathy and confidence of his preceptor by his ardor and perseverance, that he secured for him at Keokuk, Iowa, an appointment as Demonstrator of Anatomy for the course of 1850

and 1851, and in the spring of 1851 he received his diploma from the Keokuk College.

This he regarded but as a stepping-stone to the field in which he never ceased to study so long as life lasted.

He began practice in a small country village, but his old preceptor and patron falling sick, he removed to Aurora before the end of a year, and upon Dr. Hard's death he took much of his practice. He was naturally fond of surgery, and of a temperament to take the lead in that branch of the healing art.

The war found him with a reputation as surgeon fully equal to any of his fellows in the vicinity, and a man keenly alive to all that pertained to the physical welfare of the citizen or State. He took an active interest in the formation of companies and regiments in his district, and entered the service as surgeon of the 36th Illinois Infantry Volunteers with the writer as his assistant, and his keen appreciation and active application of the rules of sanitary science and of sanitary measures to the welfare of his regiment with a conservative use of medicine, enabled that regiment to pass the first and trying winter of the service with a sick and death rate markedly in contrast with the most of those around them. His executive ability was of the first order, and was often serviceable in organizing relief for the sick and wounded that were so fortunate as to be in reach of his care and influence upon the various battle fields of Pea Ridge, Corinth, Perrysville, and Murfreesborough. No red tape stood in his way in doing all that was possible in the circumstances for the suffering soldiers. Though offered a staff appointment, he preferred work as an active surgeon to that which he termed ornamental service, and while he gave to Generals Sill and Sheridan such counsel touching his branch of the service as his experience and thoughtful care enabled him to give, previous to the fearful struggle at Murfreesborough, he remained in the immediate charge of his regiment till he resigned in 1863, when he returned to Aurora to pass the remainder of his days in the active duties of a large surgical and general practice. He wielded a vigorous pen, and frequently contributed to the pages of medical journals, and took much interest in County, State, and American Medical Associations, of which he was a member, and even active supporter. He was elected President of the Illinois State Medical Society in 1872, and presided at its session in 1873 at Bloomington. While active in his professional work, he took a lively interest in the general affairs of his city. He was

twice its Mayor and several years counciliman, and at the time of his death was President of the School Board and also of the Aurora Silver Plate Manufacturing Co., and gave to the duties of each position more time than most men would spare from their private affairs.

He was a strong and positive advocate of temperance, and the free schools of our State were especially his admiration, and they had his unqualified support. That I may win credit for candor and truthfulness in that wherein I have praised him, I admit that in some things his course was open to criticism and received it from his friends, who coveted his strength, energy, and perseverance. His public spirit and zeal for the suffering poor, the oppressed, and the down-trodden, were worthy of all praise.

INDIANA.

ISAAC CASSELBERRY was born in Posey County, Indiana, on the 26th of November, 1821. He went to Evansville in July, 1841, to complete his education, and also to commence the study of medicine; after pursuing the required course of study, he graduated at the Medical College of Ohio, in 1845. He at once commenced the practice of medicine at Evansville. On the 20th of April, 1847, he was married to Miss Louisa Gavin, of Gettysburg, Pennsylvania. Dr. Casselberry early became a contributor to several medical journals, and became well known to the medical profession throughout the country. During the rebellion, he tendered his services to his country, and was appointed Surgeon of the First Indiana Cavalry. He served three years, was taken prisoner, and after being confined about three months was released by the termination of the war in 1865. On the close of the war he was appointed collector of customs in the city of Evansville, which position he held during the years 1866, 1867, and 1868.

Dr. Casselberry was one of the trustees, and also Professor of Clinical Medicine and Physical Diagnosis in the Medical College of Evansville. He has been connected with this institution from its origin, and was one of its most valued officers and a creditable teacher.

He became a member of the Indiana State Medical Society in 1852, and was elected President of the Society in 1873. While attending the meetings of the Society in 1873, he was taken un-

well; he partially recovered, but had a relapse about the last of June, and died on the 9th of July, 1873.

"His integrity commanded the respect of the community in which he so long lived and where he was widely known." He was in every respect a conscientious, liberal-hearted gentleman.

The papers which he contributed to the medical journals were—

"An Inquiry into the Physiology of the Organic Venous System."—*American Journal of the Medical Sciences.* 1852.

"Causes of Fever."—*Ibid.*, 1856.

"The Use of Water in the Treatment of Fever."—*Ibid.*, 1857.

"Use of Iron in Fever."—*Ibid.*, 1858.

"Ancient Marriages of Consanguinity."—*Ibid.*, 1859.

A series of articles on the Causes of Epidemics, published in the *Nashville Journal of Medicine and Surgery*, in 1857 and 1858.

"Quinine in Fever."—*Cincinnati Medical Observer*, 1857.

"Acetic Acid in Scarlatina."—*Lancet and Observer*, 1858.

"Oak Bark Jacket."—*Cincinnati Medical Observer*, 1857.

"Medical Theories."—*Nashville Journal of Medicine and Surgery*, 1861.

THOMAS W. FRY was born on the 4th of August, 1814, near Danville, Ky. He graduated at Centre College, Danville, in the year 1835; soon afterwards he commenced the study of medicine, and graduated at the Transylvania University, Ky., in the spring of 1837. After receiving his degree in medicine he removed to Indiana and settled in Crawfordsville, and commenced the practice of his profession. He soon became distinguished for his skill as a surgeon. He was married to Miss Maria U. Rochester in November, 1837.

At the commencement of the war, Dr. Fry tendered his services to his country, and was appointed to the Eleventh Indiana Volunteers. After serving about two years, he contracted disease, which caused his transfer to the United States Hospitals at Louisville and New Albany. At New Albany, he continued chief surgeon of the hospital until the close of the war, after which he returned to Crawfordsville.

He was appointed Collector of Internal Revenue for the Eighth Congressional District during the year 1867, and continued to serve in that capacity throughout the remainder of President Johnson's term of office, after which he resumed the practice of his profession in the city of Lafayette, and was actively engaged until within a

short time prior to his death. He died of erysipelas after an illness of six weeks, on the 24th day of February, 1873.

Before the war, Dr. Fry was an active politician, and for some time was chief editor of the *Montgomery Journal*, a paper devoted to the advancement of the Whig party.

He possessed a cultivated mind, and was highly respected by all who knew him.

Dr. JAMES P. DE BRULER was born in Orange County, North Carolina, September 21, 1817, and died at Evansville, Indiana, August 12, 1874, in the fifty-seventh year of his age. His parents moved to Indiana when he was but an infant, and located on White River, in Pike County. He began the study of medicine at an early age, and graduated in the University of Louisville. He then went to Rockport, where he commenced the practice of his profession, and remained there nearly twenty years, performing an immense amount of labor as a country practitioner, toiling in the discharge of his duties over the clay hills and through the dark swamps of Spencer County, often where there were no roads, only bridle paths to follow.

September the 2d, 1847, at the age of thirty, Dr. De Bruler was married to Miss Sallie E. Graham, of Rockport.

His laborious practice in Spencer County impaired his health, and he moved to Evansville in 1858, with the hope of becoming relieved from the burden of riding imposed upon him by his practice in the country. He soon obtained an extensive and lucrative practice at Evansville. He became connected with the Evansville Medical College, and was regarded as a very worthy member of the faculty.

During the administration of President Lincoln, he was appointed surgeon of the Marine Hospital in Evansville, which position he filled for several years most acceptably to the government. When Andrew Johnson became President, without any solicitation on his part, he was appointed Postmaster of the city of Evansville, an appointment he declined without taking charge of the office.

As a citizen, Dr. De Bruler was public spirited, generous, and full of good works. While he was in no sense a politician, he took the liveliest interest in all questions connected with National, State, and municipal affairs, and never neglected his duty as a citizen.

MARYLAND.

HENRY AUGUSTUS INLOES was born in Baltimore January 4, 1811. After receiving his classical education at St. Mary's College in his native city, he engaged in the study of medicine in the Medical Department of the University of Maryland at Baltimore, where he graduated in 1833, and immediately afterwards entered upon the practice of his profession.

Dr. Inloes was an accurate and careful observer, and a judicious practitioner, and was loved and trusted for his skill and for his kindly qualities of heart. His death, which was due to cerebral softening, resulting in hemiplegia, took place on May 28, 1874.

Dr. DOMINICK A. O'DONNELL was born in the county of Donegal, Ireland, and came to this country with his family at the age of seven years. His literary education was received at St. Mary's College near Emmettsburg, Maryland; and he afterwards graduated as Doctor of Medicine at the Jefferson College, Philadelphia, in the class of 1833. After practising first in the western part of Maryland, and afterwards in the State of Mississippi, he removed to Baltimore in 1848, and there speedily acquired a large practice. Dr. O'Donnell always manifested great interest in the affairs of the American Medical Association, regularly attending its sessions; and, notwithstanding his failing health, he was present at the meeting of 1871 in San Francisco, and there made a Report on Criminal Abortion, which attracted the general attention of the profession. Dr. O'Donnell died on the 26th of August, 1874.

GEORGE BRAINARD TODD was born in Onondaga County, New York, in 1833. After receiving his literary and medical education at the University of New York, he practised his profession in his native State until the early part of the late war, when he volunteered his services as Assistant Surgeon in the Army of the United States; whence he was transferred to the Navy during the latter part of the war.

At its close, Dr. Todd resigned his position in the Navy and commenced the practice of his profession in Baltimore; but when the affair of the Virginius occurred, and a prospect of war again appeared, he offered his services for duty in the Navy, and was at once accepted. Although war was averted, Dr. Todd continued in the Navy, and was ordered to Pensacola, Florida, where yellow

fever of a malignant character was prevailing. A few weeks after his arrival there he was attacked with the disease, and died on the 22d of September, 1874, in the 42d year of his age.

JAMES HAMAN was born in New Castle County, Delaware, in March, 1826. After graduating in medicine at the Jefferson College in Philadelphia, he began the practice of his profession in Kent County, Maryland, where he achieved a high reputation as a physician.

He removed to Baltimore in consequence of impaired health about three years before his death, which occurred from tubercular consumption, while he was on a visit to his native State, on the 29th of October, 1874, in the 49th year of his age.

GEORGE KEIDEL was born in Hildesheim, in the Kingdom of Hanover, on the 7th of February, 1799. His professional studies were prosecuted in Berlin, Göttingen, Vienna, and Rome, from which last University he received the Degree of Doctor of Medicine in 1828. After graduating he spent a year in Brazil, and returning here in 1829 began the practice of medicine, winning therein both reputation and success.

In 1853 Dr. Keidel came to America, and established himself in the practice of medicine in Baltimore, where by his talents and accomplishments he rapidly succeeded in acquiring professional business. In 1862 he retired from practice, and removed from Baltimore to the neighboring village of Catonsville, where he died on the 13th of November, 1874, in the 76th year of his age.

ALEXANDER F. DULIN was born on the 7th of May, 1806, at Low Hill Farm, Fairfax Co., Virginia.

He graduated in medicine at the University of Pennsylvania in 1830; and after spending several months as resident physician in the Almshouse of the city of Baltimore, then as now an important clinical school, he began the practice of medicine in Baltimore; and continued it with great devotion for more than thirty-five years, beloved, honored, and trusted by his fellow-citizens, his patients, and his professional brethren.

His health failing, the last four or five years of his life were spent with his family in Europe, whence he returned to his home in Baltimore only a few weeks before his death, which occurred on the 25th of November, 1874, in the 69th year of his age.

GERARD E. MORGAN was born February 6, 1828, in Hainsonburg, Virginia. While he was still very young his family moved to Maryland, and in 1852 he graduated in medicine at the Washington Medical College in Baltimore. Dr. Morgan was always devoted to the interests of his patients and of his profession, and for a number of years he filled the important position of Commissioner of Health for the city of Baltimore. His death, which occurred on December the 1st, 1874, in the 47th year of his age, was very sudden, and was probably attributable to apoplexy.

RICHARD MACKALL was born in Calvert Co., Maryland, on the 21st of January, 1805.

He was for many years extensively engaged in the practice of medicine in his native county, and at the same time was interested and occupied in political affairs, being several times elected to a seat in the House of Delegates and also in the Senate of the Maryland Legislature.

In 1868 he removed to Baltimore, and entered there upon the practice of medicine, having also received on appointment as one of the coroners of the city. Dr. Mackall was greatly beloved and trusted, both on account of his kindliness of disposition and attractive social qualities, and also for his professional attainments and skill. He died on the 2d of March, 1875, in the 71st year of his age.

BERNARD A. DOUGHERTY was born in September, 1825, at York, Pennsylvania. He entered upon the study of medicine under the direction of his uncle, Dr. D. A. O'Donnell, of whom mention has already been made in his memoir, and graduated as Doctor of Medicine in the University of Maryland in 1847.

After prosecuting his profession at first in Cumberland, Maryland, and subsequently in Baltimore, his failing health compelled him to seek relief from its duties in January, 1875, when he visited Cuba, and returned thence to New York about the middle of March. His death occurred in that city on the 1st of April, 1875, lamented in death as he had been valued in life by all who knew him, as an upright, faithful, and skilful physician.

MISSOURI.

JAMES R. WASHINGTON was born in Wayne County, North Carolina, on the 12th of October, 1816. His father was the grandson of Lewis Washington, the uncle of Gen. George Washington. After graduating at Randolph Macon College, Virginia, he pursued the study of medicine in Philadelphia, and graduated from the University of Pennsylvania in 1842. For a few years he practised his profession in his native State; but in 1846 he removed to St. Louis, and entered there upon the practice of medicine, which he continued with great devotion for twenty-nine years, and then "sacrificed his life," as is stated in an obituary notice of him by Dr. Thomas Kennard, "in attempting to save that of others."

"About the 15th of January, 1875, he came home feeling extremely ill, and saying that he felt as if he were about to have typhoid fever; and against the advice of his son he insisted on going out the following day and attending to his patients, several of whom were very sick. He came home and was attacked with pneumonia, from which he suffered until his death on the 19th of March, 1875. . . . . Dr. Washington, though for many years burdened with the cares and anxieties of a large and profitable practice, never turned a deaf ear to the cry of the sick poor. He was in every sense a true and good physician, and few members of our profession will leave a more honorable and enviable name than he has left."

NEW JERSEY.

R. F. W. FAIRCHILD died at his residence, Parcipany, Morris County, New Jersey, of apoplexy, on 24th of February, 1874, aged 53 years.

EDMUND HANCE, a son of the Rev. Edmund Hance, died near Mount Holly 25th of February, 1874, aged 22 years.

JOSEPH M. ROTZELL died 27th of February, 1874, at Gloucester City.

RICHARD M. COOPER was a son of Richard M. Cooper, a very prominent and public spirited man of Gloucester County, New Jersey, whose ancestors settled there in 1678. The subject of this sketch graduated in the literary department of the University of

Pennsylvania in 1836, and in the medical department in 1839; after which he established himself in his native city Camden, and there practised medicine for 35 years with distinguished success. He stood in the front rank of the profession in New Jersey. Kind, generous, and possessing a large amount of this world's goods, he practised in very many cases out of love for the profession, and where his patients were in needy circumstances usually without charge.

At the time of his death he was President of the District Medical Society of Camden: in 1856 he was President of the Medical Society of New Jersey; and was ever since its foundation a member of the American Medical Association.

His death, which occurred on the 24th of May, 1874, when he was about 60 years of age, was brought about by the inroads of gout, an ancestral inheritance, which he was no longer able to ward off by activity and attention to business. We have this assurance from his own lips to cheer us: "I have an abiding faith in the efficacy of the atonement of Christ."

FRANCIS MARKOE WRIGHT was born in New York in 1830, and graduated at the University of the city of New York in 1848, and in the College of Physicians and Surgeons in 1853. For two years and six months he was House Surgeon of the New York Hospital, and after engaging in private practice until 1859 he became assistant physician to the Utica Insane Asylum. In the late civil war he was appointed Surgeon to the second New York Cavalry, a position in which he remained four years, settling at the end of that time in Eaglewood, New Jersey.

Two years ago he made a tour of Europe for the recuperation of his health, which was fast becoming undermined by rapidly advancing phthisis pulmonalis. Soon after his return home he was elected President of the District Medical Society for the county of Bergen, and occupied this position at the time of his death, which occurred at the residence of his uncle, Dr. Markoe, in New York, March 16, 1874, in the 44th year of his age.

JOHN E. SPENCER, of Moorestown, died 26th of June, 1874, at Santa Barbara, California.

ROBERT S. SMITH died at his residence in Boundbrook, August 20, 1874, in the 75th year of his age. He was a good practitioner, had a large practice, was an active member of the District Med-

ical Society of Somerset County, and in 1845 was President of the Medical Society of New Jersey.

JOHN HAMILTON SLACK, a regular graduate in medicine, was a man of varied talents and good attainments. He was an amateur printer, musician, and painter; but above all an observer of the habits of the finny tribe. Some years ago he settled himself in Warren County, near Bloomsburg, where he established artificial beds for the propagation of fish, and was appointed one of the fish commissioners for the State of New Jersey. He named his residence Troutdale, at which place he died August 27, 1874.

JOSEPH CROSS died at Elizabeth, October 10, 1874, in the 67th year of his age.

STACY B. KIRKBRIDE died in Moorestown, March 3, 1875, aged 46 years.

PENNSYLVANIA.

The medical profession offers to its members when faithful to their duties, not only extraordinary means of gaining the respect of the cultivators of science, but also of acquiring the warm attachment of friends.

The subject of this sketch, JOHN T. RAY, furnishes a striking proof that this, although one of the blessings of life, is to the physician, frequently, the cause of its premature termination.

In attempting to delineate the life and character of a distinguished member of our profession, the writer feels that in so brief a space as is allotted him, he may fail of doing justice to the name and memory of one so highly appreciated in our community.

For the early history of the Doctor's life I am indebted to Mrs. Ray.

John T. Ray, M.D., was born August 2, 1817, at Frankford, a suburb of Philadelphia. Soon after his birth his parents removed to Delaware. His early education was received at the academy in Newark, Delaware. This is the oldest institution in the State, and celebrated its Centennial in 1869. The Rev. Arthur Russel was then Principal. After leaving school, he entered the drug store of Chandler & Co., in Wilmington, Delaware, and commenced the study of medicine in the office of Dr. Allan McLane, a physician

of great eminence at that time. During the winters of 1835, '36, and '37, he attended lectures at the University of Pennsylvania, and the following spring (1838) graduated. Subject of essay, "Dyspepsia." In the fall of 1841, he started west, after visiting a number of places, among others, Erie, which he speaks of, when writing home, as a small but pleasant town.

Through the earnest solicitation of friends, he settled in Greenville, where his skill as a physician soon brought him into notice. In May, 1844, he was married to Miss Eve, a lady of fine culture, who cheered and encouraged him in the toils of a physician's life. After practising some ten years in Greenville, he removed to Meadville, through the invitation of a number of prominent citizens. Being a man of kindly impulses and courteous demeanor, added to an imposing presence, he possessed the elements of personal popularity. As a physician and surgeon, his reputation was most creditable, and he felt himself equal to any emergency. As a practitioner, he combined excellences rarely united in one individual, while his self-abnegation, love of truth, regard for justice, and untiring industry, marked him as a representative man in this community. He did much to foster our County Medical Society, and represented us several times in the State and National Associations.

The Doctor had a rich vein of humor, was prompt in repartee, and abounding in anecdotes, and consequently his society was much sought after.

The sickness which terminated in his death was granular degeneration of the kidneys; but, though painful and protracted, his mind remained unclouded to the end, his intellect as bright and his judgment as good as in his best days.

He died at his residence in Meadville, February 12, 1874, with calmness and resignation, trusting in the merits of his Redeemer. The words that fell from his lips not long before death, beautifully indicate a heart at rest, a heavenly peace that nothing earthly had power to take away. "I can do nothing but trust in the mercy of God in Jesus Christ, and this I fully do." Can we doubt that he has received the plaudit, "Well done, good and faithful servant"?

VIRGINIA.

FRANCIS TALIAFERRO STRIBLING was born in Staunton, Virginia, on the 20th of January, 1810, and died in the same town on the 23d of July, 1874.

After receiving his primary education, he was employed for some years in the office of his father, who was then clerk of Augusta County Court. Having determined to adopt the medical profession, after some preparatory reading under the advice of a distinguished physician of Staunton, he attended medical lectures, first at the University of Virginia, and afterwards at the University of Pennsylvania, where he received the degree of M.D. in 1830. Returning to his native town, he commenced the practice of his profession, and soon won the confidence of the public. In 1836, when only twenty-six years of age, he was elected Physician to the Western Lunatic Asylum of Virginia; and in 1840, when the office of Physician was merged in that of Superintendent, he was elected to the latter position, which he continued to fill with distinguished ability and success, until his decease. During this long period of service, the number of inmates progressively increased from 72 to more than 350.

Dr. Stribling was, by a happy combination of qualities, peculiarly fitted for the successful management of the insane. While learned and skilful in his profession, and familiar with the various phases of mental disorder, he united to great equanimity of temper, and kindliness and suavity of manner, an inflexible firmness, and was thus enabled to command the respect and obedience, as well as the confidence and attachment, of his patients. Nor was he less distinguished for administrative ability, and untiring devotion to the duties of his office. He superintended and directed not only the general working, but the minutest details of the asylum over which he so long presided; and the fruits of his vigorous and enlightened supervision were exhibited in the admirable condition of the institution, and the perfect order and system which reigned in every department. In the treatment of insanity, he entered heartily into the spirit of that reform which, regarding the insane as subjects of disease, and not as demoniacs or criminals, substituted a system of humanity and mildness, with a large appeal to moral influences, for the harsh restraints and cruel discipline of former days, and made an asylum for the insane a sanitarium instead of a prison: and his success earned

for him a widespread reputation, and a paramount authority in his native State on all questions connected with his specialty, while the gratitude of the many who were indebted to his care and skill for their relief from the saddest of human afflictions was an unceasing source of the sweetest satisfaction a benevolent and sympathizing heart can feel.

But Dr. Stribling's interest in the welfare of the insane was by no means limited to the unfortunates under his immediate care. He was the first to propose, as long ago as 1845, the establishment of an asylum for the *colored insane*, and he never ceased to urge it upon the Legislature until this humane and wise object had been accomplished. The establishment of the Central Lunatic Asylum, at Richmond, in 1870, was the fruit of his persistent efforts in that direction, and secured to Virginia the honor of being the first State to found an institution for the separate and exclusive care of the colored insane.

To him is also due the credit of having been the first to propose the organization of the "Association of Medical Superintendents of American Institutions for the Insane," which held its first meeting in 1844, and which has done so much to elevate the character of our asylums, and to diffuse enlightened views with regard to the management of the insane. He continued an active and zealous member of this body until the close of his life, and was repeatedly solicited to accept its presidency, but domestic reasons, and the absorbing duties of his official position, constrained him to decline the honor.

Ever animated by a true spirit of philanthropy, Dr. Stribling was among the most active and influential of the public men of Virginia in securing the establishment of the institution for the deaf and dumb and the blind, and was a member of the first Board of Visitors of that noble charity. He was also a member of the Board of Visitors of the Medical College of Virginia, an honorary member of the Medical Society of Virginia, and for many years a member of the vestry of the church which numbered him among its most faithful and exemplary communicants. In private life he was universally esteemed for his integrity and benevolence of character, his geniality of disposition and courtesy of manners, his cordial hospitality, and his domestic virtues; and his death was felt by all to be a great loss to the society which he adorned, as well as to his State and country, but most of all to that unfortunate class of his fellow beings to whose care and cure he had devoted

the best energies of nearly forty years of his laborious and useful life. Among the most impressive incidents of his funeral was the presence of some fifty convalescent patients of the asylum in the line of the procession.

THOMAS PLEASANTS ATKINSON was born in Chesterfield County, Virginia, in the year 1795, and died August 30, 1874, in the 79th year of his age. He was a resident of Amelia County at the time of his death, but the sad event occurred at the Buffalo Springs, in Mecklenburg County, where he was temporarily sojourning for the benefit of his health.

He attended medical lectures at the University of Pennsylvania, and received his degree in 1817. In the practice of his profession, he achieved success and reputation, but many years before his death he relinquished its toils and cares for other and (to him) more attractive pursuits. He was at one time a member of the Legislature—having been tempted into public life, no doubt, by his fondness for politics and his personal popularity—at another time an editor, and, for a number of years, while a resident of the thriving town of Danville, actively interested in commercial and financial affairs.

Dr. Atkinson, however, never lost his attachment to the profession of his early choice, nor his zeal for its advancement and honor. In 1852, though no longer an active member of the profession, he was a delegate to the American Medical Association from the medical society of the county in which he then resided; and in the following year, the high estimate of his former professional standing and his personal character entertained by the profession of the State at large was evinced by his election to the presidency of the Medical Society of Virginia, the meetings of which body he seldom failed to attend and take an active part in, until their interruption by the shock and turmoil of war. On the resuscitation of the society in 1870, he was complimented with an honorary membership. Notwithstanding his advanced age, he continued to attend the meetings with the same interest as before, and enjoyed the attendant social reunions of the profession with as keen a zest as the youngest member. At each of the last two meetings preceding his decease, he contributed to the Transactions a paper on the "Anatomical, Physiological, and Pathological Differences between the White and Black Races." He also, in these closing years of his life, wrote occasional articles for the medical journals.

Socially, Dr. Atkinson was a most estimable man. His kindliness of heart, his geniality and vivacity of temperament, and his varied fund of information and reminiscence, made him an ever agreeable associate to old and young alike, and his character was without reproach. He was one of the purest and best of men.

WILLIAM OWENS was born in Staunton, Virginia, on the 12th of January, 1788. Three years later the family removed to Lynch's Ferry (now Lynchburg), where he ever afterwards resided, and where he died on the 22d of January, 1875, in the eighty-eighth year of his age. At the time of his death he was probably the oldest physician in the State.

At an early age he was placed in a drug store to learn the business, and on reaching manhood opened an establishment of his own, which proved very successful. While thus engaged, he commenced the study of medicine, and after a systematic course of reading, pursued under the guidance of an able instructor, he attended a course of lectures at the University of Pennsylvania. Pecuniary difficulties, resulting from liabilities incurred for some of his friends, prevented him from carrying out his design of attending a second course and obtaining the degree, and he entered at once into active practice. This was in the spring of 1815; and from that time to the year 1870—a period of fifty-five years—he trod incessantly the paths of professional toil. His success was great, and his practice large and lucrative. His services were called into requisition in all quarters of the surrounding country, and, though practising in a small town, situated in the midst of an agricultural district, it is said that, at one period, during the prevalence of an epidemic, he visited as many as 1100 patients in a month. An unusual degree of bodily and mental vigor, sustained by strict temperance of life, alone enabled him to endure such incessant labor, prolonged through so many years, without failure of health and strength. Apart from his aptitude for, and his untiring devotion to, the duties of his profession, his kindness, gentleness, and warmth of nature greatly endeared him to his patients, and lighted up the gloom of the sick chamber like a sunbeam. Nature seemed to have signally fitted him for his calling.

The recognized skill and enlarged experience of Dr. Owens caused his aid and counsel to be frequently sought by his professional brethren in difficult cases, and for many years he performed nearly all the obstetrical operations called for in his town and the

country adjacent. He also held high rank as a surgeon, and performed many important operations with skill and success. As long ago as 1816, he resected the entire shaft of the tibia, preserving the periosteum, and the patient recovered without perceptible deformity, or impairment of the use of the limb. In 1834, he contrived a splint for fractures of the condyles of the humerus, which has ever since been known and used in Lynchburg as his invention, but which is identical with one which has been more recently claimed as the invention of another, and as such is described and figured in Hamilton's treatise on Fractures.

Dr. Owens exhibited no ambition to shine outside of his immediate circle of labor and duty. So far as is known, he never made any contribution to medical literature, and the profession at large was thus deprived of the valuable lessons which might have been derived from the publication of the results of his extensive experience.

With all his professional reputation, and amid all the demands upon his services among the best classes of society, he never forgot the poor, but was as faithful and tender in his ministrations to them as to the rich and influential. Probably few physicians have ever done so great an amount of gratuitous labor. His kindness and charity to the sick and afflicted, and to all in distress, were proverbial. A prudent attention to his own interests would have enabled him to realize a large fortune from his practice; but such was his indulgence to his patrons, and so large the losses sustained through his kindness in becoming security for friends, as well as by the results of the war, that he died at last in very moderate circumstances.

No better tribute could be rendered to the character of this beloved physician and useful citizen, than that embodied in one of the resolutions adopted on the occasion of his decease by the Lynchburg Medical Association (of which body he had been the first president), which declared "that during his professional career he distinguished himself by a blameless life, an honorable character, genial sympathies, reverence for truth, and a respect for the rights of others; and in his jealous watchfulness over professional purity and honor, he left us an example worthy of imitation."

WILLIAM A. GILLESPIE, M.D., died in Louisa County, Virginia, January 10, 1875, at the age of 72. He was a type of the faithful and hard-working country practitioner. Possessing an active and

independent mind, and a sound practical judgment, he occupied a leading position in the profession in his section of the State up to the time of his death, and enjoyed in a large degree, the confidence of the most intelligent class of patrons. He made occasional contributions on practical subjects to the medical journals, as well as to the Transactions of the Medical Society of Virginia, of which he was an active member. His attention being given to agriculture as well as medicine, he also from time to time furnished to the *Planter and Farmer*, articles on topics connected with the former interest. He bore a high character in every relation of life, and died deeply regretted by the community which had so long recognized his worth, and enjoyed the benefit of his services.

THOMAS C. CLOPTON, M.D., died in Gloucester County, Virginia, February 15, 1875, aged 72 years. Early in life, his professional merits, united to indomitable energy of character, won for him a high rank as a physician, and an extensive practice in his own and several adjacent counties. He endeared himself to the poor especially, by promptly responding to their calls in sickness, without pausing to consider the question of their ability to compensate him for his services. This disinterested and humane conduct was repaid with love and admiration on their part, and will cause his name to be long held in grateful remembrance by the inmates of many a humble dwelling.

Dr. Clopton also rendered useful service to his fellow-citizens in other relations. He was for some time a justice of the peace, and represented his county for several sessions in the House of Delegates, with great satisfaction to his constituents, to whose interests he was always true. He was a Virginian of the old school—high-toned, chivalrous, and patriotic; and, though not far from sixty years of age at the outbreak of the civil war, he raised a volunteer company, and entered the Confederate army as captain, where he remained in active service until failing health compelled his resignation.

PLAN OF ORGANIZATION

FOR A

NATIONAL MEDICAL ASSOCIATION.

PLAN OF ORGANIZATION

FOR A

NATIONAL MEDICAL ASSOCIATION.

Whereas, The Medical Convention, held in the city of New York, in May, 1846, have declared it expedient "for the medical profession of the United States to institute a National Medical Association;" and,

Inasmuch as an institution so conducted as to give frequent, united, and emphatic expression to the views and aims of the medical profession in this country, must, at all times, have a beneficial influence, and supply more efficient means than have hitherto been available here for cultivating and advancing medical knowledge; for elevating the standard of medical education; for promoting the usefulness, honor, and interests of the medical profession; for enlightening and directing public opinion in regard to the duties, responsibilities, and requirements of medical men; for exciting and encouraging emulation and concert of action in the profession, and for facilitating and fostering friendly intercourse between those who are engaged in it: therefore,

Be it resolved, In behalf of the medical profession of the United States, that the members of the Medical Convention, held in Philadelphia in May, 1847, and all others who, in pursuit of the objects above mentioned, are to unite with or succeed them, constitute a National Medical Association; and that, for the organization and management of the same, they adopt the following *Regulations*:—

I.—TITLE OF THE ASSOCIATION.

This institution shall be known and distinguished by the name and title of "The American Medical Association."

II.—MEMBERS.

The members of this institution shall collectively represent and have cognizance of the common interests of the medical profession in every part of the United States; and shall hold their appointment to membership either as delegates from local institutions, as members by invitation, or as permanent members.

The *Delegates* shall receive their appointment from permanently organized State medical societies, and such county and district medical societies as are recognized by representation in their respective State societies, and from the medical department of the army and navy of the United States.

Each delegate shall hold his appointment for one year, and until another is appointed to succeed him, and shall participate in all the business and affairs of the Association.

Each State, county, and district medical society, entitled to representation, shall have the privilege of sending to the Association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number; *Provided*, however, that the number of delegates from any particular State, Territory, county, city, or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of this Association. The Medical Staffs of the army and navy shall be entitled to four delegates each.

No individual who shall be under sentence of expulsion or suspension from any State or local medical society of which he may have been a member, or whose name shall have been, for non-payment of dues, dropped from the rolls of the same, shall be received as a delegate to this Association, or be allowed any of the privileges of a member, until he shall have been relieved from the said sentence or disability by such State or local society, or shall have paid up all arrears of membership; nor shall any person not a member and supporter of a local medical society, where such a one exists, be eligible to membership in the American Medical Association.

No one expelled from this Association shall at any time thereafter be received as a delegate or member, unless by a three-fourths vote of the members present at the meeting to which he is sent, or at which he is proposed.

Members by Invitation shall consist of practitioners of reputable

standing from sections of the United States not otherwise represented at the meeting. They shall receive their appointment by invitation of the meeting, after an introduction from, and being vouched for by, at least three of the members present, or three of the absent permanent members. They shall hold their connection with the Association until the close of the annual session at which they are received; and shall be entitled to participate in all its affairs, as in the case of delegates, except the right to vote.

The *Permanent Members* shall consist of all those who have served in the capacity of delegates, and of such other members as may receive the appointment by unanimous vote, and shall continue such so long as they remain in good standing in the body from which they were sent as delegates, and comply with the requirements of the By-laws of the Association. Permanent members shall at all times be entitled to attend the meetings, and participate in the affairs of the Association, so long as they shall continue to conform to its regulations, but without the right of voting; and, when not in attendance, they shall be authorized to grant letters of introduction to reputable practitioners of medicine residing in their vicinity, who may wish to participate in the business of the meeting, as provided for members by invitation.

Every member elect, prior to the permanent organization of the annual meeting, or before voting on any question after the meeting has been organized, must exhibit his credentials to the proper committee, and sign these regulations, inscribing his name and address in full, specifying in what capacity he attends, and, if a delegate, the title of the institution from which he has received his appointment.

III.—MEETINGS.

The regular meetings of the Association shall be held annually, and commence on the first Tuesday in May or first Tuesday in June. The place of meeting shall be determined, with the time of meeting for each next successive year, by vote of the Association.

IV.—OFFICERS.

The officers of the Association shall be a President, four Vice-Presidents, one Permanent and one Assistant Secretary, a Treasurer, and Librarian. They shall be nominated by a special committee of one member from each State represented at the meeting, and shall be elected by vote on a general ticket.

Each officer, except the Permanent Secretary, shall hold his

appointment for one year, and until another is elected to succeed him. The Permanent Secretary shall hold his appointment until removed by death, resignation, or a vote of two thirds of the members present at a regular annual meeting.

The President and Vice-Presidents shall assume the functions of their respective offices at the beginning of the annual meeting next succeeding their election; all other officers shall enter upon their duties immediately after their election.

The President shall preside at the meetings, preserve order and decorum in debate, give a casting vote when necessary, and perform all the other duties that custom and parliamentary usage may require.

The Vice-Presidents, when called upon, shall assist the President in the performance of his duties, and during the absence, or at the request of the President, one of them shall officiate in his place.

The Permanent Secretary shall record the minutes and authenticate the proceedings; give due notice of the time and place of each next ensuing annual meeting; notify all members of committees of their appointment, and of the duties assigned to them; hold correspondence with other permanently organized medical societies, both domestic and foreign; serve as a member of the Committee of Publication; see that the published *Transactions* are promptly distributed to all the members who have paid the annual assessment, and carefully preserve the archives and unpublished transactions of the Association.

The Assistant Secretary shall aid the Permanent Secretary in recording and authenticating the proceedings of the Association; serve as a member of the Committee of Arrangements, and perform all the duties of Permanent Secretary temporarily, whenever that office shall be vacant, either by death, resignation, or removal.

The Treasurer shall have the immediate charge and management of the funds and property of the Association. He shall be a member of the Committee of Publication, to which committee he shall give bonds for the safe keeping and proper use and disposal of his trust. And through the same committee he shall present his accounts, duly authenticated, at every regular meeting.

The Librarian shall receive and preserve all the property in books, pamphlets, journals, and manuscripts presented to or acquired by the Association, record their titles in a book prepared for the purpose, acknowledge the receipt of the same, and he shall be a member of the Committee of Publication.

V.—STANDING COMMITTEES.

The following standing committees, each composed of seven members, shall be organized at every annual meeting, for preparing, arranging, and expediting business for each next ensuing year, and for carrying into effect the orders of the Association not otherwise assigned, namely, a Committee of Arrangements and a Committee of Publication.

The Committee of Arrangements shall, if no sufficient reasons prevent, be mainly composed of seven members, of whom the Assistant Secretary shall be one, residing in the place at which the Association is to hold its next annual meeting; and shall be required to provide suitable accommodations for the meeting, to verify and report upon the credentials of membership, to receive and announce all essays and memoirs voluntarily communicated, either by members of the Association, or by others through them, and to determine the order in which such papers are to be read and considered.

The Committee of Publication, of which the Secretaries, Treasurer, and Librarian must constitute a part, shall have charge of preparing for the press, and of publishing and distributing such of the proceedings, transactions, and memoirs of the Association as may be ordered to be published. The six members of this Committee, who have not the immediate management of the funds, shall also, in their own names as agents for the Association, hold the bond of the Treasurer for the faithful execution of his office, and shall annually audit and authenticate his accounts, and present a statement of the same in the annual report of the Committee; which report shall specify the character and cost of the publications of the Association during the year, the number of copies still at the disposal of the meeting, the funds on hand for further operations, and the probable amount of the assessment to be laid on each member of the Association for covering its annual expenditures.

VI.—FUNDS AND APPROPRIATIONS.

Funds shall be raised by the Association for meeting its current expenses and awards from year to year, but never with the view of creating a permanent income from investments. Funds may be obtained by an equal assessment of not more than five dollars annually, on each of the delegates and permanent members; by voluntary contributions for specific objects; and by the sale and disposal of publications, or of works prepared for publication.

The funds may be appropriated for defraying the expenses of the annual meetings, including the necessary expenses of the Permanent Secretary in maintaining the necessary correspondence of the Association; for publishing the proceedings, memoirs, and transactions of the Association; for enabling the Standing Committees to fulfil their respective duties, conduct their correspondence, and procure the materials necessary for the completion of their stated annual reports; for the encouragement of scientific investigation by prizes and awards of merit; and for defraying the expenses incidental to specific investigations under the instruction of the Association, where such investigations have been accompanied with an order on the Treasurer to supply the funds necessary for carrying them into effect.

VII.—PROVISION FOR AMENDMENT.

No amendment or alteration shall be made in any of these articles, except at the annual meeting next subsequent to that at which such amendment or alteration may have been proposed; and then only by the voice of three-fourths of all the delegates in attendance.

Provided, however, that when an amendment is properly under consideration, and an amendment is offered thereto, germane to the subject, it shall be in order, and if adopted, shall have the same standing and force as if proposed at the preceding meeting of the Association.

And, in acknowledgment of having adopted the foregoing propositions, and of our willingness to abide by them, and use our endeavors to carry into effect the objects of this Association as above set forth, we have hereunto affixed our names.

NAMES OF MEMBERS.	RESIDENCE.	INSTITUTION REPRESENTED.

BY-LAWS.

I.—ORDER OF BUSINESS.

The order of business at the annual meetings of the American Medical Association shall at all times be subject to the vote of three-fourths of all the members in attendance; and, until permanently altered, except when for a time suspended, it shall be as follows, viz.:—

1st. The calling of the meeting to order by the President elected the preceding year, or, in his absence, by one of the Vice-Presidents.

2d. The report of the Committee of Arrangements on the credentials of members, after the latter have registered their names and addresses, and the titles of the institutions which they represent.

3d. The reception of members by invitation.

4th. The election of permanent members.

5th. The reading of notes from absentees.

6th. The hearing of the annual address of the President.

7th. The reception of the reports of all special committees and voluntary communications, and their reference to the appropriate Sections.

8th. The appointment of the committee of one from each State represented, to nominate officers of the Association, and to fill the standing committees.

9th. The reading and consideration of the reports of the Standing Committees of Publication, on Prize Essays, and of Chairmen of Sections.

10th. Resolutions introducing new business, and instructions to the permanent committees.

11th. The selection of the next place of meeting.

12th. The report of the Nominating Committee, and the election of officers of the Association.

13th. Reports from the several Sections.

14th. Reading of the minutes by the Secretary.

15th. Unfinished and miscellaneous business.

16th. Adjournment.

II.—SECTIONS.

The general meetings of the Association shall be restricted to the morning sessions; and the afternoon sessions, commencing at three o'clock, shall be devoted to the hearing of reports and papers and their consideration, in the following *Sections*:—

1. Practical Medicine, Materia Medica, and Physiology.
2. Obstetrics and Diseases of Women and Children.
3. Surgery and Anatomy.
4. Medical Jurisprudence, Chemistry, and Psychology.
5. State Medicine and Public Hygiene.

The chairman and secretary of the several Sections shall, like other officers of the Association, be nominated by the special committee of one member from each State represented at the meeting, and elected by a vote on a general ticket. They shall hold their office until the close of the proper business of the annual meeting next succeeding their election, and until their successors are appointed.

The Section on State Medicine and Public Hygiene shall be composed of one member from each State, one from the army and one from the navy of the United States, representing, as far as practicable, the State Boards of Health. The officers of this Section to be also designated by the Committee on Nominations.

The chairmen of the several Sections shall prepare and read in the general sessions of the Association, papers on the advances and discoveries of the past year in the branches of science included in their respective Sections; the reading of such papers not to occupy longer than forty minutes for each.

Papers appropriate to the several Sections, in order to secure consideration and action, must be sent to the Secretary of the appropriate Section at least one month before the meeting which is to act upon them. It shall be the duty of the Secretary to whom such papers are sent, to examine them with care, and, with the advice of the Chairman of his Section, to determine the time and order of their presentation, and give due notice of the same; and, after their full examination and discussion by the Section, they shall be sent to the Permanent Secretary of the Association.

No paper shall be read before either of the Sections, the reading of which occupies more than twenty minutes. Such papers shall be referred by the Section to sub-committees especially appointed for their examination. The sub-committees shall be allowed thirty

days for such examination; at the end of which time they shall forward the papers to the Committee of Publication, with such recommendation as they may deem proper. The author of such papers, however, may read abstracts before the Section within the allotted twenty minutes. No member shall address the Section more than once upon the same subject, nor speak longer than fifteen minutes without unanimous consent.

All papers presented directly to the Association, and other matters, may, at the discretion of the Association, be referred to the various sections for their consideration and report.

III.—STANDING COMMITTEES.

The following are the Standing Committees of the Association, to be filled by the Committee on Nominations, and to report at the next annual meeting subsequent to their appointment, viz.: Committee of Arrangements; Committee of Publication; Committee on Prize Essays; and Committee on American Medical Necrology.

The *Committee of Publication* shall append to each volume of the *Transactions* hereafter published, a copy of the Constitution, By-Laws, and Code of Ethics of the Association. It shall print conspicuously, at the beginning of each volume of the *Transactions*, the following disclaimer, viz.: The American Medical Association, although formally accepting and publishing the reports of the various standing committees, holds itself wholly irresponsible for the opinions, theories, or criticisms therein contained, except when otherwise decided by special resolution.

The *Committee on Prize Essays* shall consist of five members, residing in the same neighborhood, whose duty it shall be, in the interval between the present and the next succeeding annual sessions, to receive original papers upon any medical subject, from any persons who may choose to send them; to decide upon the merits of these papers, and to select for presentation to the Association, at its next session, such as they may deem worthy of being thus presented. The Committee shall have power to form such regulations as to the mode in which the papers are to be presented, and as to the observing of secrecy, as they may think proper; and also to award two prizes of one hundred dollars each, to the best two original communications reported on favorably by them, and directed by the Association to be published.

The *Committee on American Medical Necrology* shall consist of one

member for each State and Territory represented in the Association, whose duty it shall be to procure memorials of the eminent and worthy dead among the distinguished physicians of their respective States and Territories, and transmit them to the chairman of this committee on or before the first of April of each and every year.

IV.—THE PUBLICATION OF PAPERS AND REPORTS.

No report or other paper shall be entitled to publication in the volume for the year in which it shall be presented to the Association, unless it be placed in the hands of the Committee of Publication on or before the first day of July. It must also be so prepared as to require no material alteration or addition at the hands of its author.

Authors of papers are required to return their proofs within two weeks after their reception; otherwise they will be passed over and omitted from the volume.

Every paper received by this Association and ordered to be published, and all plates or other means of illustration, shall be considered the exclusive property of the Association, and shall be published and sold for the exclusive benefit of the Association.

The Committee of Publication shall have full discretionary power to omit from the published *Transactions*, in part or in whole, any paper that may be referred to it by the Association, or either of the Sections, unless specially instructed to the contrary by vote of the Association.

V.—ASSESSMENTS.

The sum of five dollars shall be assessed, annually, upon each delegate to the sessions of the Association, as well as upon each of its permanent members, whether attending or not, for the purpose of raising a fund to defray necessary expenses. The payment of this sum shall be required of the delegates and members in attendance upon the sessions of the Association previously to their taking their seats and participating in the business of the sessions. Permanent members, not in attendance, shall transmit their dues to the Treasurer.

Any permanent member who shall fail to pay his annual dues for three successive years, unless absent from the country, shall be dropped from the roll of permanent members, after having been notified by the Secretary of the forfeiture of his membership.

VI.—DELEGATES FROM THE MEDICAL STAFFS OF THE ARMY AND NAVY.

Delegates representing the medical staffs of the United States Army and Navy, shall be appointed by the Chiefs of the Army and Navy Medical Bureaus. The number of delegates so appointed shall be four from the army medical officers, and an equal number from the navy medical officers.

VII.—DELEGATES TO FOREIGN MEDICAL SOCIETIES.

The President shall be authorized annually to appoint delegates to represent this Association at the meetings of the British Medical Association, the American Medical Society at Paris, and such other scientific bodies in Europe or other foreign countries as may be affiliated with us.

VIII.—DUTIES OF MEMBERS.

No one shall be permitted to address the Association, except he shall have first given his name and residence, which shall be distinctly announced from the chair, and the member may be required to go forward and speak from the stand, but not more than ten minutes at one time.

No one appointed on a special committee, who fails to report at the meeting next succeeding the one at which he is appointed, shall be continued on such committee, or appointed on any other, unless a satisfactory excuse is offered.

It shall be the duty of every member of this Association, who learns that any existing medical school departs from the published conditions of graduation, to report the fact at the annual meetings; and, on proof of the fact, such school shall be deprived of its representation in this body.

IX.—CONDITION EXCLUDING REPRESENTATION.

No State or Local Medical Society, or other organized institution, shall be entitled to representation in this Association that has not adopted its Code of Ethics; or that has intentionally violated or disregarded any article or clause of the same.

This Association recognizes as a "regular organized" medical college one that has been represented at any meeting, and that complies with the rules and directions found in the published *Transactions*, vol. xiii. page 33.

X.—OF THE PREVIOUS QUESTION.

When the previous question is demanded, it shall take at least twenty members to second it; and when the main question is put under force of the previous question and negatived, the question shall remain under consideration the same as if the previous question had not been enforced.

XI.—JUDICIAL COUNCIL.

A council, consisting of twenty-one members, shall be appointed by the Nominating Committee, whose duty it shall be to take cognizance of, and decide, all questions of an ethical or judicial character that may arise in connection with the Association. Of the twenty-one members of the council first appointed the seven first named on the list shall hold office one year, and the second seven named shall hold office two years.

With these exceptions the term of office of members of the council shall be three years, seven being appointed by the Nominating Committee annually.

The said council shall organize by choosing a President and Secretary, and shall keep a permanent record of its proceedings. The decisions of said council on all matters referred to it by the Association shall be final, and shall be reported to the Association at the earliest practical moment.

All questions of a personal character, including complaints and protests, and all questions on credentials, shall be referred at once, after the report of the Committee of Arrangements or other presentation, to the *Judicial Council*, and without discussion.

XII.—NEW BUSINESS.

No new business, resolutions by members, etc., shall be introduced at the general session of the Association except on the first and fourth days of meetings.

ORDINANCES.

Resolved, That the several Sections of this Association be requested, in the future, to refer no papers or reports to the Committee of Publication, except such as can be fairly classed under one of the three following heads, viz: 1st. Such as may contain and establish *positively* new facts, modes of practice, or principles of real value. 2d. Such as may contain the results of well-devised original experimental researches. 3d. Such as present so complete a review of the facts on any particular subject as to enable the writer to deduce therefrom legitimate conclusions of importance.

Resolved, That the several sections be requested, in the future, to refer all such papers as may be presented to them for examination by this Association, that contain matter of more or less value, and yet cannot be fairly ranked under either of the heads mentioned in the foregoing resolution, back to their authors with the recommendation that they be published in such regular medical periodicals as said authors may select, with the privilege of placing at the head of such papers, "Read to the Section of the American Medical Association on the day of 18 ." (Vide *Transactions*, vol. xvi. p. 40.)

Resolved, That the Association shall send annually a delegate to the "Association of Medical Superintendents of Insane Asylums," one of whose duties it shall be to urge upon that Association the advantage, for all purposes of science, of a more intimate union with this Association. (Vide *Transactions*, vol. xvi. p. 41.)

Resolved, That, instead of yearly reprinting the list of members of the American Medical Association, the Committee of Publication be instructed to prepare and print in the *Transactions* an alphabetical catalogue triennially, containing a complete list of the Permanent Members, with their names in full, designating their residences, the year of their admission, the offices they may have held in the Association, and, in case of death or rejection, the date thereof. (Vide *Transactions*, vol. xvii. p. 33.)

Resolved, That no report or other paper shall be presented to this Association unless it be so prepared that it can be put at once into the hands of the Permanent Secretary, to be transmitted to the Committee of Publication. (Vide *Transactions*, vol. xvii. p. 27.)

Resolved, That the Permanent Secretary hereafter and from this

date be authorized to draw a warrant upon the Treasurer for the expenses incurred in his attendance upon each session of the Association, and that the Treasurer is hereby instructed to pay the same. (Vide *Transactions*, vol. xviii. p. 42.)

Resolved, That the faculties of the several medical colleges of the United States be recommended to announce explicitly in their annual commencement circulars and advertisements that they will not receive certificates of time of study from irregular practitioners, and that they will not confer the degree upon any one who may acknowledge his intention to practise in accordance with any exclusive system. (Vide *Transactions*, vol. xix. p. 31.)

Resolved, That there be added to the Committee of Arrangements a Sub-committee of Arrangements in each of our large cities, consisting of three members, whose duty it shall be to obtain, if practicable, a reduction of fare upon the routes of travel for the delegates from their city and vicinity who attend the meeting of the Association.

On motion, the Permanent Secretary was empowered to make the appointments on said committees. (Vide *Transactions*, vol. xix. p. 39.)

Resolved, That a standing committee of one be appointed upon the whole subject of vaccination, to report from time to time on such topics connected with it as shall, in the estimation of said committee, appear of chief practical interest and importance to the profession. (Vide *Transactions*, vol. xix. p. 40.)

Resolved, That those gentlemen who desire to report on special subjects, and will pledge themselves to report at the next meeting, be requested to send their names, and the subjects on which they desire to report, to the Permanent Secretary. (Vide *Transactions*, vol. xix. p. 42.)

Resolved, That hereafter the necessary expenses for rent of hall for general meetings and rooms for sections to accommodate the annual meetings, and the necessary expenses for cards of membership, be paid out of the treasury of the Association. (Vide *Transactions*, vol. xix. p. 42.)

Resolved, That each State Medical Society be requested to prepare an annual register of all the regular practitioners of medicine in their respective States, giving the names of the colleges in which they may have graduated, and date of diploma or license. (Vide *Transactions*, vol. xx. p. 20.)

Resolved, That this Association recognizes specialties as proper and legitimate fields of practice.

Resolved, That specialists shall be governed by the same rules of professional etiquette as have been laid down for general practitioners.

Resolved, That it shall not be proper for specialists publicly to advertise themselves such, or to assume any title not specially granted by a regularly chartered college.

Resolved, That private handbills addressed to members of the medical profession, or by cards in medical journals, calling the attention of professional brethren to themselves as specialists, be declared in violation of the Code of Ethics of the American Medical Association. (Vide *Transactions*, vol. xx. p. 28.)

Resolved, That a Committee of one be appointed, residing at Washington, to render the Librarian of Congress such assistance as the interests of the Association may require. (Vide *Transactions*, vol. xx. p. 29.)

Whereas, The proper construction of Art. IV., Sec. 1, Code of Ethics, A. M. A., having been called for, relative to consultation with irregular practitioners who are graduates of regular schools:

Resolved, That said Art. IV., Sect. 1, Code of Ethics, excludes all such practitioners from recognition by the regular profession. (Vide *Transactions*, vol. xx. p. 30.)

Whereas, The contract system is contrary to medical ethics:

Resolved, That all contract physicians, as well as those guilty of bidding for practice at less rates than those established by a majority of regular graduates of the same locality, be classed as irregular practitioners. (Vide *Transactions*, vol. xx. p. 41.)

Resolved, That if any member fail to reply for more than one year to the circular sent to him by the Committee of Publication, he shall forfeit his right to the volume, and it shall revert to the Association, to be sold to any applicant at the current rates. (Vide *Transactions*, vol. xxi. p. 30.)

Resolved, That the Committee of Arrangements for the next ensuing meeting of this Association, and for all meetings thereafter, be directed to prepare a list of members present on a separate roll, for convenience and accuracy in calling the ayes and nays when the same shall be demanded. (Vide *Transactions*, vol. xxi. p. 60.)

Resolved, That each year, until otherwise ordered, the President elect and the Permanent Secretary be directed to appeal, in the name of the Association, to the authorities of each State where

no State Board of Health exists, urging them to establish such boards. (Vide *Transactions*, vol. xxvi. p. 50.)

Resolved, That the Permanent Secretary is hereby directed annually to report the names of States where boards of health exist, and also of those which decline to establish them; said report to form a part of the annual proceedings of the Association. (Vide *Transactions*, vol. xxvi. p. 50.)

CODE OF ETHICS

OF THE

AMERICAN MEDICAL ASSOCIATION,

ADOPTED MAY, 1847.

CODE OF MEDICAL ETHICS.

OF THE DUTIES OF PHYSICIANS TO THEIR PATIENTS, AND OF THE OBLIGATIONS OF PATIENTS TO THEIR PHYSICIANS.

ART. I.—*Duties of physicians to their patients.*

§ 1. A physician should not only be ever ready to obey the calls of the sick, but his mind ought also to be imbued with the greatness of his mission, and the responsibility he habitually incurs in its discharge. These obligations are the more deep and enduring, because there is no tribunal other than his own conscience to adjudge penalties for carelessness or neglect. Physicians should, therefore, minister to the sick with due impressions of the importance of their office; reflecting that the ease, the health, and the lives of those committed to their charge, depend on their skill, attention, and fidelity. They should study, also, in their deportment, so to unite *tenderness* with *firmness*, and *condescension* with *authority*, as to inspire the minds of their patients with gratitude, respect, and confidence.

§ 2. Every case committed to the charge of a physician should be treated with attention, steadiness, and humanity. Reasonable indulgence should be granted to the mental imbecility and caprices of the sick. Secrecy and delicacy, when required by peculiar circumstances, should be strictly observed; and the familiar and confidential intercourse to which physicians are admitted in their professional visits, should be used with discretion, and with the most scrupulous regard to fidelity and honor. The obligation of secrecy extends beyond the period of professional services;—none of the privacies of personal and domestic life, no infirmity of disposition or flaw of character observed during professional attendance should ever be divulged by the physician except when he is imperatively required to do so. The force and necessity of this obligation are indeed so great, that professional men have, under

certain circumstances, been protected in their observance of secrecy by courts of justice.

§ 3. Frequent visits to the sick are in general requisite, since they enable the physician to arrive at a more perfect knowledge of the disease—to meet promptly every change which may occur, and also tend to preserve the confidence of the patient. But unnecessary visits are to be avoided, as they give useless anxiety to the patient, tend to diminish the authority of the physician, and render him liable to be suspected of interested motives.

§ 4. A physician should not be forward to make gloomy prognostications, because they savor of empiricism, by magnifying the importance of his services in the treatment or cure of the disease. But he should not fail, on proper occasions, to give to the friends of the patient timely notice of danger when it really occurs; and even to the patient himself, if absolutely necessary. This office, however, is so peculiarly alarming when executed by him, that it ought to be declined whenever it can be assigned to any other person of sufficient judgment and delicacy. For the physician should be the minister of hope and comfort to the sick; that, by such cordials to the drooping spirit, he may smooth the bed of death, revive expiring life, and counteract the depressing influence of those maladies which often disturb the tranquillity of the most resigned in their last moments. The life of a sick person can be shortened not only by the acts, but also by the words or the manner of a physician. It is, therefore, a sacred duty to guard himself carefully in this respect, and to avoid all things which have a tendency to discourage the patient and to depress his spirits.

§ 5. A physician ought not to abandon a patient because the case is deemed incurable; for his attendance may continue to be highly useful to the patient, and comforting to the relatives around him, even in the last period of a fatal malady, by alleviating pain and other symptoms, and by soothing mental anguish. To decline attendance, under such circumstances, would be sacrificing to fanciful delicacy and mistaken liberality, that moral duty, which is independent of, and far superior to, all pecuniary consideration.

§ 6. Consultations should be promoted in difficult or protracted cases, as they give rise to confidence, energy, and more enlarged views in practice.

§ 7. The opportunity which a physician not unfrequently enjoys of promoting and strengthening the good resolutions of his patients, suffering under the consequences of vicious conduct, ought never

to be neglected. His counsels, or even remonstrances, will give satisfaction, not offence, if they be proffered with politeness, and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

ART. II.—*Obligations of patients to their physicians.*

§ 1. The members of the medical profession, upon whom is enjoined the performance of so many important and arduous duties towards the community, and who are required to make so many sacrifices of comfort, ease, and health, for the welfare of those who avail themselves of their services, certainly have a right to expect and require, that their patients should entertain a just sense of the duties which they owe to their medical attendants.

§ 2. The first duty of a patient is to select as his medical adviser one who has received a regular professional education. In no trade or occupation do mankind rely on the skill of an untaught artist; and in medicine, confessedly the most difficult and intricate of the sciences, the world ought not to suppose that knowledge is intuitive.

§ 3. Patients should prefer a physician whose habits of life are regular, and who is not devoted to company, pleasure, or to any pursuit incompatible with his professional obligations. A patient should, also, confide the care of himself and family, as much as possible, to one physician; for a medical man who has become acquainted with the peculiarities of constitution, habits, and predispositions of those he attends, is more likely to be successful in his treatment than one who does not possess that knowledge.

A patient who has thus selected his physician should always apply for advice in what may appear to him trivial cases, for the most fatal results often supervene on the slightest accidents. It is of still more importance that he should apply for assistance in the forming stage of violent diseases; it is to a neglect of this precept that medicine owes much of the uncertainty and imperfection with which it has been reproached.

§ 4. Patients should faithfully and unreservedly communicate to their physician the supposed cause of their disease. This is the more important, as many diseases of a mental origin simulate those depending on external causes, and yet are only to be cured by ministering to the mind diseased. A patient should never be afraid of thus making his physician his friend and adviser; he

should always bear in mind that a medical man is under the strongest obligations of secrecy. Even the female sex should never allow feelings of shame or delicacy to prevent their disclosing the seat, symptoms, and causes of complaints peculiar to them. However commendable a modest reserve may be in the common occurrences of life, its strict observance in medicine is often attended with the most serious consequences, and a patient may sink under a painful and loathsome disease, which might have been readily prevented had timely intimation been given to the physician.

§ 5. A patient should never weary his physician with a tedious detail of events or matters not appertaining to his disease. Even as relates to his actual symptoms, he will convey much more real information by giving clear answers to interrogatories, than by the most minute account of his own framing. Neither should he obtrude upon his physician the details of his business nor the history of his family concerns.

§ 6. The obedience of a patient to the prescriptions of his physician should be prompt and implicit. He should never permit his own crude opinions as to their fitness to influence his attention to them. A failure in one particular may render an otherwise judicious treatment dangerous, and even fatal. This remark is equally applicable to diet, drink, and exercise. As patients become convalescent, they are very apt to suppose that the rules prescribed for them may be disregarded, and the consequence, but too often, is a relapse. Patients should never allow themselves to be persuaded to take any medicine whatever, that may be recommended to them by the self-constituted doctors and doctresses who are so frequently met with, and who pretend to possess infallible remedies for the cure of every disease. However simple some of their prescriptions may appear to be, it often happens that they are productive of much mischief, and in all cases they are injurious, by contravening the plan of treatment adopted by the physician.

§ 7. A patient should, if possible, avoid even the *friendly visits of a physician* who is not attending him—and when he does receive them, he should never converse on the subject of his disease, as an observation may be made, without any intention of interference, which may destroy his confidence in the course he is pursuing, and induce him to neglect the directions prescribed to him. A patient should never send for a consulting physician without the express consent of his own medical attendant. It is of great importance that physicians should act in concert; for, although their modes

of treatment may be attended with equal success when employed singly, yet conjointly they are very likely to be productive of disastrous results.

§ 8. When a patient wishes to dismiss his physician, justice and common courtesy require that he should declare his reasons for so doing.

§ 9. Patients should always, when practicable, send for their physician in the morning, before his usual hour of going out; for by being early aware of the visits he has to pay during the day, the physician is able to apportion his time in such a manner as to prevent an interference of engagements. Patients should also avoid calling on their medical adviser unnecessarily during the hours devoted to meals or sleep. They should always be in readiness to receive the visits of their physician, as the detention of a few minutes is often of serious inconvenience to him.

§ 10. A patient should, after his recovery, entertain a just and enduring sense of the value of the services rendered him by his physician; for these are of such a character, that no mere pecuniary acknowledgment can repay or cancel them.

OF THE DUTIES OF PHYSICIANS TO EACH OTHER, AND TO THE PROFESSION AT LARGE.

ART. I.—*Duties for the support of professional character.*

§ 1. Every individual, on entering the profession, as he becomes thereby entitled to all its privileges and immunities, incurs an obligation to exert his best abilities to maintain its dignity and honor, to exalt its standing, and to extend the bounds of its usefulness. He should, therefore, observe strictly such laws as are instituted for the government of its members;—should avoid all contumelious and sarcastic remarks relative to the faculty as a body; and while, by unwearied diligence, he resorts to every honorable means of enriching the science, he should entertain a due respect for his seniors, who have, by their labors, brought it to the elevated condition in which he finds it.

§ 2. There is no profession, from the members of which greater purity of character, and a higher standard of moral excellence are required, than the medical; and to attain such eminence is a duty every physician owes alike to his profession and to his patients. It is due to the latter, as without it he cannot command their respect and confidence, and to both, because no scientific attainments can

compensate for the want of correct moral principles. It is also incumbent upon the faculty to be temperate in all things, for the practice of physic requires the unremitting exercise of a clear and vigorous understanding; and, on emergencies, for which no professional man should be unprepared, a steady hand, an acute eye, and an unclouded head may be essential to the well-being, and even to the life, of a fellow-creature.

§ 3. It is derogatory to the dignity of the profession to resort to public advertisements, or private cards, or handbills, inviting the attention of individuals affected with particular diseases—publicly offering advice and medicine to the poor gratis, or promising radical cures; or to publish cases and operations in the daily prints, or suffer such publications to be made; to invite laymen to be present at operations, to boast of cures and remedies, to adduce certificates of skill and success, or to perform any other similar acts. These are the ordinary practices of empirics, and are highly reprehensible in a regular physician.

§ 4. Equally derogatory to professional character is it for a physician to hold a patent for any surgical instrument or medicine; or to dispense a secret *nostrum*, whether it be the composition or exclusive property of himself or of others. For, if such nostrum be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality; and if mystery alone give it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice. It is also reprehensible for physicians to give certificates attesting the efficacy of patent or secret medicines, or in any way to promote the use of them.

ART. II.—*Professional services of physicians to each other.*

§ 1. All practitioners of medicine, their wives, and their children while under the paternal care, are entitled to the gratuitous services of any one or more of the faculty residing near them, whose assistance may be desired. A physician afflicted with disease is usually an incompetent judge of his own case; and the natural anxiety and solicitude which he experiences at the sickness of a wife, a child, or any one who, by the ties of consanguinity, is rendered peculiarly dear to him, tend to obscure his judgment, and produce timidity and irresolution in his practice. Under such circumstances, medical men are peculiarly dependent upon each other, and kind offices and professional aid should always be cheerfully

and gratuitously afforded. Visits ought not, however, to be obtruded officiously; as such unasked civility may give rise to embarrassment, or interfere with that choice on which confidence depends. But, if a distant member of the faculty, whose circumstances are affluent, request attendance, and an honorarium be offered, it should not be declined; for no pecuniary obligation ought to be imposed, which the party receiving it would wish not to incur.

ART. III.—*Of the duties of physicians as respects vicarious offices.*

§ 1. The affairs of life, the pursuit of health, and the various accidents and contingencies to which a medical man is peculiarly exposed, sometimes require him temporarily to withdraw from his duties to his patients, and to request some of his professional brethren to officiate for him. Compliance with this request is an act of courtesy, which should always be performed with the utmost consideration for the interest and character of the family physician, and when exercised for a short period, all the pecuniary obligations for such service should be awarded to him. But if a member of the profession neglect his business in quest of pleasure and amusement, he cannot be considered as entitled to the advantages of the frequent and long-continued exercise of this fraternal courtesy, without awarding to the physician who officiates, the fees arising from the discharge of his professional duties.

In obstetrical and important surgical cases, which give rise to unusual fatigue, anxiety, and responsibility, it is just that the fees accruing therefrom should be awarded to the physician who officiates.

ART. IV.—*Of the duties of physicians in regard to consultations.*

§ 1. A regular medical education furnishes the only presumptive evidence of professional abilities and acquirements, and ought to be the only acknowledged right of an individual to the exercise and honors of his profession. Nevertheless, as in consultations the good of the patient is the sole object in view, and this is often dependent on personal confidence, no intelligent regular practitioner, who has a license to practise from some medical board of known and acknowledged respectability, recognized by this Association, and who is in good moral and professional standing in the place in which he resides, should be fastidiously excluded from fellow-

ship, or his aid refused in consultation, when it is requested by the patient. But no one can be considered as a regular practitioner or a fit associate in consultation, whose practice is based on an exclusive dogma, to the rejection of the accumulated experience of the profession, and of the aids actually furnished by anatomy, physiology, pathology, and organic chemistry.

§ 2. In consultations, no rivalship or jealousy should be indulged; candor, probity, and all due respect should be exercised towards the physician having charge of the case.

§ 3. In consultations, the attending physician should be the first to propose the necessary questions to the sick; after which the consulting physician should have the opportunity to make such further inquiries of the patient as may be necessary to satisfy him of the true character of the case. Both physicians should then retire to a private place for deliberation; and the one first in attendance should communicate the directions agreed upon to the patient or his friends, as well as any opinions which it may be thought proper to express. But no statement or discussion of it should take place before the patient or his friends, except in the presence of all the faculty attending, and by their common consent; and no *opinions* or *prognostications* should be delivered which are not the result of previous deliberation and concurrence.

§ 4. In consultations, the physician in attendance should deliver his opinion first; and when there are several consulting, they should deliver their opinions in the order in which they have been called in. No decision, however, should restrain the attending physician from making such variations in the mode of treatment as any subsequent unexpected change in the character of the case may demand. But such variation, and the reasons for it, ought to be carefully detailed at the next meeting in consultation. The same privilege belongs also to the consulting physician if he is sent for in an emergency, when the regular attendant is out of the way, and similar explanations must be made by him at the next consultation.

§ 5. The utmost punctuality should be observed in the visits of physicians when they are to hold consultation together, and this is generally practicable, for society has been considerate enough to allow the plea of a professional engagement to take precedence of all others, and to be an ample reason for the relinquishment of any present occupation. But as professional engagements may sometimes interfere, and delay one of the parties, the physician who first arrives should wait for his associate a reasonable period, after

which the consultation should be considered as postponed to a new appointment. If it be the attending physician who is present, he will of course see the patient and prescribe; but if it be the consulting one, he should retire, except in case of emergency, or when he has been called from a considerable distance, in which latter case he may examine the patient, and give his opinion in *writing*, and *under seal*, to be delivered to his associate.

§ 6. In consultations, theoretical discussions should be avoided, as occasioning perplexity and loss of time. For there may be much diversity of opinion concerning speculative points, with perfect agreement in those modes of practice which are founded, not on hypothesis, but on experience and observation.

§ 7. All discussions in consultation should be held as secret and confidential. Neither by words nor manner should any of the parties to a consultation assert or insinuate that any part of the treatment pursued did not receive his assent. The responsibility must be equally divided between the medical attendants—they must equally share the credit of success as well as the blame of failure.

§ 8. Should an irreconcilable diversity of opinion occur when several physicians are called upon to consult together, the opinion of the majority should be considered as decisive; but if the numbers be equal on each side, then the decision should rest with the attending physician. It may, moreover, sometimes happen that two physicians cannot agree in their views of the nature of a case, and the treatment to be pursued. This is a circumstance much to be deplored, and should always be avoided, if possible, by mutual concessions, as far as they can be justified by a conscientious regard for the dictates of judgment. But in the event of its occurrence, a third physician should, if practicable, be called to act as umpire; and, if circumstances prevent the adoption of this course, it must be left to the patient to select the physician in whom he is most willing to confide. But, as every physician relies upon the rectitude of his judgment, he should, when left in the minority, politely and consistently retire from any further deliberation in the consultation, or participation in the management of the case.

§ 9. As circumstances sometimes occur to render a *special consultation* desirable, when the continued attendance of two physicians might be objectionable to the patient, the member of the faculty whose assistance is required in such cases should sedulously guard against all future unsolicited attendance. As such consultations

require an extraordinary portion both of time and attention, at least a double honorarium may be reasonably expected.

§ 10. A physician who is called upon to consult, should observe the most honorable and scrupulous regard for the character and standing of the practitioner in attendance; the practice of the latter, if necessary, should be justified as far as it can be, consistently with a conscientious regard for truth, and no hint or insinuation should be thrown out which could impair the confidence reposed in him, or affect his reputation. The consulting physician should also carefully refrain from any of those extraordinary attentions or assiduities which are too often practised by the dishonest for the base purpose of gaining applause, or ingratiating themselves into the favor of families and individuals.

ART. V.—*Duties of physicians in cases of interference.*

§ 1. Medicine is a liberal profession, and those admitted into its ranks should found their expectations of practice upon the extent of their qualifications, not on intrigue or artifice.

§ 2. A physician, in his intercourse with a patient under the care of another practitioner, should observe the strictest caution and reserve. No meddling inquiries should be made—no disingenuous hints given relative to the nature and treatment of his disorder; nor any course of conduct pursued that may directly or indirectly tend to diminish the trust reposed in the physician employed.

§ 3. The same circumspection and reserve should be observed when, from motives of business or friendship, a physician is prompted to visit an individual who is under the direction of another practitioner. Indeed, such visits should be avoided, except under peculiar circumstances; and when they are made, no particular inquiries should be instituted relative to the nature of the disease, or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

§ 4. A physician ought not to take charge of or prescribe for a patient who has recently been under the care of another member of the faculty in the same illness, except in cases of sudden emergency, or in consultation with the physician previously in attendance, or when the latter has relinquished the case, or been regularly notified that his services are no longer desired. Under such circumstances no unjust and illiberal insinuations should be thrown out in relation to the conduct or practice previously pursued, which should

be justified as far as candor and regard for truth and probity will permit; for it often happens that patients become dissatisfied when they do not experience immediate relief, and, as many diseases are naturally protracted, the want of success, in the first stage of treatment, affords no evidence of a lack of professional knowledge and skill.

§ 5. When a physician is called to an urgent case, because the family attendant is not at hand, he ought, unless his assistance in consultation be desired, to resign the care of the patient to the latter immediately on his arrival.

§ 6. It often happens in cases of sudden illness, or of recent accidents and injuries, owing to the alarm and anxiety of friends, that a number of physicians are simultaneously sent for. Under these circumstances, courtesy should assign the patient to the first who arrives, who should select from those present any additional assistance that he may deem necessary. In all such cases, however, the practitioner who officiates should request the family physician, if there be one, to be called, and, unless his further attendance be requested, should resign the case to the latter on his arrival.

§ 7. When a physician is called to the patient of another practitioner, in consequence of the sickness or absence of the latter, he ought, on the return or recovery of the regular attendant and with the consent of the patient, to surrender the case.

[The expression, "patient of another practitioner," is understood to mean a patient who may have been under the charge of another practitioner at the time of the attack of sickness, or departure from home of the latter, or who may have called for his attendance during his absence or sickness, or in any other manner given it to be understood that he regarded the said physician as his regular medical attendant.]

§ 8. A physician, when visiting a sick person in the country may be desired to see a neighboring patient who is under the regular direction of another physician, in consequence of some sudden change or aggravation of symptoms. The conduct to be pursued on such an occasion is to give advice adapted to present circumstances; to interfere no further than is absolutely necessary with the general plan of treatment; to assume no future direction unless it be expressly desired; and, in this last case, to request an immediate consultation with the practitioner previously employed.

§ 9. A wealthy physician should not give advice *gratis* to the affluent; because his doing so is an injury to his professional bre-

thren. The office of a physician can never be supported as an exclusively beneficent one; and it is defrauding, in some degree, the common funds for its support, when fees are dispensed with which might justly be claimed.

§ 10. When a physician who has been engaged to attend a case of midwifery is absent, and another is sent for, if delivery is accomplished during the attendance of the latter, he is entitled to the fee, but should resign the patient to the practitioner first engaged.

ART. VI.—*Of differences between physicians.*

§ 1. Diversity of opinion and opposition of interest may, in the medical as in other professions, sometimes occasion controversy and even contention. Whenever such cases unfortunately occur, and cannot be immediately terminated, they should be referred to the arbitration of a sufficient number of physicians or a *court-medical.*

§ 2. As peculiar reserve must be maintained by physicians towards the public, in regard to professional matters, and as there exist numerous points in medical ethics and etiquette through which the feelings of medical men may be painfully assailed in their intercourse with each other, and which cannot be understood or appreciated by general society, neither the subject-matter of such differences nor the adjudication of the arbitrators should be made public, as publicity in a case of this nature may be personally injurious to the individuals concerned, and can hardly fail to bring discredit on the faculty.

ART. VII.—*Of pecuniary acknowledgments.*

Some general rules should be adopted by the faculty, in every town or district, relative to *pecuniary acknowledgments* from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit.

OF THE DUTIES OF THE PROFESSION TO THE PUBLIC, AND OF THE OBLIGATIONS OF THE PUBLIC TO THE PROFESSION.

ART. I.—*Duties of the profession to the public.*

§ 1. As good citizens, it is the duty of physicians to be ever vigilant for the welfare of the community, and to bear their part in sustaining its institutions and burdens; they should also be ever

ready to give counsel to the public in relation to matters especially appertaining to their profession, as on subjects of medical police, public hygiene, and legal medicine. It is their province to enlighten the public in regard to quarantine regulations—the location, arrangement, and dietaries of hospitals, asylums, schools, prisons, and similar institutions—in relation to the medical police of towns, as drainage, ventilation, etc.—and in regard to measures for the prevention of epidemic and contagious diseases; and when pestilence prevails, it is their duty to face the danger, and to continue their labors for the alleviation of the suffering, even at the jeopardy of their own lives.

§ 2. Medical men should also be always ready, when called on by the legally constituted authorities, to enlighten coroners' inquests and courts of justice, on subjects strictly medical—such as involve questions relating to sanity, legitimacy, murder by poisons or other violent means, and in regard to the various other subjects embraced in the science of Medical Jurisprudence. But in these cases, and especially where they are required to make a *post-mortem* examination, it is just, in consequence of the time, labor, and skill required, and the responsibility and risk they incur, that the public should award them a proper honorarium.

§ 3. There is no profession by the members of which eleemosynary services are more liberally dispensed than the medical, but justice requires that some limits should be placed to the performance of such good offices. Poverty, professional brotherhood, and certain of the public duties referred to in the first section of this article, should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public or by rich individuals, societies for mutual benefit, for the insurance of lives or for analogous purposes, nor any profession or occupation, can be admitted to possess such privilege. Nor can it be justly expected of physicians to furnish certificates of inability to serve on juries, to perform militia duty, or to testify to the state of health of persons wishing to insure their lives, obtain pensions, or the like, without a pecuniary acknowledgment. But to individuals in indigent circumstances, such professional services should always be cheerfully and freely accorded.

§ 4. It is the duty of physicians, who are frequent witnesses of the enormities committed by quackery, and the injury to health and even destruction of life caused by the use of quack medicines, to enlighten the public on these subjects, to expose the injuries

sustained by the unwary from the devices and pretensions of artful empirics and impostors. Physicians ought to use all the influence which they may possess, as professors in Colleges of Pharmacy, and by exercising their option in regard to the shops to which their prescriptions shall be sent, to discourage druggists and apothecaries from vending quack or secret medicines, or from being in any way engaged in their manufacture and sale.

ART. II.—*Obligations of the public to physicians.*

§ 1. The benefits accruing to the public, directly and indirectly, from the active and unwearied beneficence of the profession, are so numerous and important, that physicians are justly entitled to the utmost consideration and respect from the community. The public ought likewise to entertain a just appreciation of medical qualifications; to make a proper discrimination between true science and the assumptions of ignorance and empiricism—to afford every encouragement and facility for the acquisition of medical education —and no longer to allow the statute-books to exhibit the anomaly of exacting knowledge from physicians, under a liability to heavy penalties, and of making them obnoxious to punishment for resorting to the only means of obtaining it.

OFFICERS

OF THE

AMERICAN MEDICAL ASSOCIATION.

CATALOGUE OF THE OFFICERS

OF THE

AMERICAN MEDICAL ASSOCIATION.

PRESIDENTS AND VICE-PRESIDENTS OF THE AMERICAN MEDICAL ASSOCIATION.

1847-48.

PHILADELPHIA.

PRESIDENT.

NATHANIEL CHAPMAN, M. D., *Pennsylvania.*

VICE-PRESIDENTS.

JONATHAN KNIGHT, M.D., *Connecticut.*
ALEXANDER H. STEVENS, M.D., *New York.*
JAMES MOULTRIE, M.D., *South Carolina.*
A. H. BUCHANAN, M.D., *Tennessee.*

1848-49.

BALTIMORE.

PRESIDENT.

ALEXANDER H. STEVENS, M.D., *New York.*

VICE-PRESIDENTS.

JOHN C. WARREN, M.D., *Massachusetts.*
SAMUEL JACKSON, M.D., *Pennsylvania.*
PAUL F. EVE, M.D., *Georgia.*
W. M. AWL, M.D., *Ohio.*

1849-50.

BOSTON.

PRESIDENT.

JOHN C. WARREN, M.D., *Massachusetts.*

VICE-PRESIDENTS.

JOHN P. HARRISON, M.D., *Ohio.*
AUSTIN FLINT, M.D., *New York.*
HUGH H. MAGUIRE, M.D., *Virginia.*
R. S. STEWART, M.D., *Maryland.*

1850-51.

CINCINNATI.

PRESIDENT.

REUBEN D. MUSSEY, M.D., *Ohio.*

VICE-PRESIDENTS.

J. B. JOHNSON, M.D., *Missouri.*
DANIEL BRAINARD, M.D., *Illinois.*
A. LOPEZ, M.D., *Alabama.*
GEORGE W. NORRIS, M.D., *Pennsylvania.*

1851-52.

CHARLESTON.

PRESIDENT.

JAMES MOULTRIE, M.D., *South Carolina.*

VICE-PRESIDENTS.

GEORGE HAYWARD, M.D., *Massachusetts.*
B. R. WELLFORD, M.D., *Virginia.*
R. D. ARNOLD, M.D., *Georgia.*
J. B. FLINT, M.D., *Kentucky.*

1852-53.

RICHMOND.

PRESIDENT.

BEVERLY R. WELLFORD, M.D., *Virginia.*

VICE-PRESIDENTS.

JONATHAN KNIGHT, M.D., *Connecticut.*
THOMAS Y. SIMONS, M.D., *South Carolina.*
JAMES W. THOMSON, M.D., *Delaware.*
C. A. POPE, M.D., *Missouri.*

1853-54.

NEW YORK.

PRESIDENT.

JONATHAN KNIGHT, M. D., *Connecticut.*

VICE-PRESIDENTS.

USHER PARSONS, M. D., *Rhode Island.*
LEWIS CONDICT, M. D., *New Jersey.*
HENRY R. FROST, M. D., *South Carolina.*
R. L. HOWARD, M. D., *Ohio.*

1854-55.

ST. LOUIS.

PRESIDENT.

CHARLES A. POPE, M. D., *Missouri.*

VICE-PRESIDENTS.

E. D. FENNER, M. D., *Louisiana.*
N. S. DAVIS, M. D., *Illinois.*
WM. WRAGG, M. D., *South Carolina.*
JOHN GREEN, M. D., *Massachusetts.*

1855-56.

PHILADELPHIA.

PRESIDENT.

GEORGE B. WOOD, M. D., *Pennsylvania.*

VICE-PRESIDENTS.

WM. M. BOLING, M. D., *Alabama.*
DANIEL TILDEN, M. D., *Ohio.*
D. HUMPHREYS STORER, M. D., *Massachusetts.*
GRAFTON TYLER, M. D., *District of Columbia.*

1856-57.

DETROIT.

PRESIDENT.

ZINA PITCHER, M. D., *Michigan.*

VICE-PRESIDENTS.

THOMAS W. BLATCHFORD, M. D., *New York.*
E. GEDDINGS, M. D., *South Carolina.*
WM. K. BOWLING, M. D., *Tennessee.*
W. H. BRISBANE, M. D., *Wisconsin.*

1857-58.

NASHVILLE.

PRESIDENT.

PAUL F. EVE, M. D., *Tennessee.*

VICE-PRESIDENTS.

R. J. BRECKENRIDGE, M. D., *Kentucky.*
W. H. BYFORD, M. D., *Indiana.*
D. M. REESE, M. D., *New York.*
HENRY F. CAMPBELL, M. D., *Georgia.*

1858-59.

WASHINGTON.

PRESIDENT.

HARVEY LINDSLEY, M. D., *District of Columbia.*

VICE-PRESIDENTS.

W. L. SUTTON, M. D., *Kentucky.*
JOSIAH CROSBY, M. D., *New Hampshire.*
THOMAS O. EDWARDS, M. D., *Iowa.*
W. C. WARREN, M. D., *North Carolina.*

1859-60.

LOUISVILLE.

PRESIDENT.

HENRY MILLER, M. D., *Kentucky.*

VICE-PRESIDENTS.

HENRY F. ASKEW, M. D., *Delaware.*
LYNDON A. SMITH, M. D., *New Jersey.*
CHARLES S. TRIPLER, M. D., *United States Army.*
CALVIN WEST, M. D., *Indiana.*

1860-68.

NEW HAVEN.

PRESIDENT.

ELI IVES, M. D., *Connecticut.*

VICE-PRESIDENTS.

WILSON JEWELL, M. D., *Pennsylvania.*
JOSEPH A. LOGAN, M. D., *Georgia.*
A. B. PALMER, M. D., *Michigan.*
JOSEPH N. MCDOWELL, M. D., *Missouri.*

1863-64.

CHICAGO.

PRESIDENT.

ALDEN MARCH, M. D., *New York.*

VICE-PRESIDENTS.

JAMES COUPER, M. D., *Delaware.*
DAVID PRINCE, M. D., *Illinois.*
CHRISTOPHER C. COX, M. D., *Maryland.*
EZRA S. CARR, M. D., *Wisconsin.*

1864.

NEW YORK.

PRESIDENT.

NATHAN S. DAVIS, M. D., *Illinois.*

VICE-PRESIDENTS.

W. H. MUSSEY, M. D., *Ohio.*
WORTHINGTON HOOKER, M. D., *Connecticut.*
WILLIAM WHELAN, M. D., *District of Columbia.*
F. E. B. HEINTZE, M. D., *Maryland.*

1865.

BOSTON.

The Constitution having been amended, the same officers presided also at Boston. (Vide *Transactions*, vol. xv. p. 50.)

1866.

BALTIMORE.

PRESIDENT.

D. HUMPHREYS STORER, M. D., *Massachusetts.*

VICE-PRESIDENTS.

JAMES F. HIBBERD, M. D., *Indiana.*
STEPHEN O. ALMY, M. D., *Ohio.*
THEOPHILUS C. DUNN, M. D., *Rhode Island.*
W. P. JOHNSON, M. D., *District of Columbia.*

1867.

CINCINNATI.

PRESIDENT.

HENRY F. ASKEW, M. D., *Delaware.*

VICE-PRESIDENTS.

WILLIAM K. BOWLING, M. D., *Tennessee.*
J. C. HUGHES, M. D., *Iowa.*
H. I. BOWDITCH, M. D., *Massachusetts.*
THOMAS C. BRINSMADE, M. D., *New York.*

1868.

WASHINGTON.

PRESIDENT.

SAMUEL D. GROSS, M. D., *Pennsylvania.*

VICE-PRESIDENTS.

ALFRED C. POST, M. D., *New York.*
JOHN L. ATLEE, M. D., *Pennsylvania.*
DAVID W. YANDELL, M. D., *Kentucky.*
HORATIO ROBINSON STORER, M. D., *Massachusetts.*

1869.

NEW ORLEANS.

PRESIDENT.

WILLIAM O. BALDWIN, M. D., *Alabama.*

VICE-PRESIDENTS.

GEORGE MENDENHALL, M. D., *Ohio.*
NOBLE YOUNG, M. D., *District of Columbia.*
N. P. MONROE, M. D., *Maine.*
S. M. BEMISS, M. D., *Louisiana.*

1870.

WASHINGTON.

PRESIDENT.

GEORGE MENDENHALL, M. D., *Ohio.*

VICE-PRESIDENTS.

WARREN STONE, M. D., *Louisiana.*
LOUIS A. SAYRE, M. D., *New York.*
F. GURNEY SMITH, M. D., *Pennsylvania.*
JOHN S. MOORE, M. D., *Missouri.*

1871.

SAN FRANCISCO.

PRESIDENT.

ALFRED STILLÉ, M.D., *Pennsylvania.*

VICE-PRESIDENTS.

J. S. WETHERLY, M.D., *Alabama.*
HENRY GIBBONS, M.D., *California.*
T. J. HEARD, M.D., *Texas.*
SAMUEL WILLEY, M.D., *Minnesota.*

1872.

PHILADELPHIA.

PRESIDENT.

D. W. YANDELL, M.D., *Kentucky.*

VICE-PRESIDENTS.

THOMAS M. LOGAN, M.D., *California.*
CHARLES L. IVES, M.D., *Connecticut.*
R. F. MICHEL, M.D., *Alabama.*
J. K. BARTLETT, M.D., *Wisconsin.*

1873.

ST. LOUIS.

PRESIDENT.

THOMAS M. LOGAN, M.D., *California.*

VICE-PRESIDENTS.

B. H. CATLIN, M.D., *Connecticut.*
W. M. MCPHEETERS, M.D., *Missouri.*
A. M. POLLOCK, M.D., *Pennsylvania.*
W. T. BRIGGS, M.D., *Tennessee.*

1874.

DETROIT.

PRESIDENT.

JOSEPH M. TONER, M.D., *District of Columbia.*

VICE-PRESIDENTS.

W. Y. GADBERRY, M.D., *Mississippi.*
JAMES M. KELLER, M.D., *Kentucky.*
N. C. HUSTED, M.D., *New York.*
L. F. WARNER, M.D., *Massachusetts.*

1875.

LOUISVILLE.

PRESIDENT.

W. K. BOWLING, M.D., *Tennessee.*

VICE-PRESIDENTS.

WILLIAM BRODIE, M.D., *Michigan.*
J. J. WOODWARD, M.D., *United States Army.*
H. W. BROWN, M.D., *Texas.*
H. D. DIDAMA, M.D., *New York.*

OFFICERS FOR 1876.

PHILADELPHIA.

PRESIDENT.

J. MARION SIMS, M.D., *New York.*

VICE-PRESIDENTS.

JOHN DAVIES JACKSON, M.D., *Kentucky.*
SAMUEL LILLY, M.D., *New Jersey.*
NINIAN PINKNEY, M.D., *United States Navy.*
S. D. SEELYE, M.D., *Alabama.*

PERMANENT SECRETARY.

WILLIAM B. ATKINSON, M.D., *Pennsylvania.*

ASSISTANT SECRETARY.

RICHARD J. DUNGLISON, M.D., *Pennsylvania.*

TREASURER.

CASPAR WISTER, M.D., *Pennsylvania.*

LIBRARIAN.

WILLIAM LEE, M.D., *District of Columbia.*

COMMITTEE ON LIBRARY.

JOHNSON ELIOT, M.D., *District of Columbia.*

PERMANENT MEMBERS.

"The sum of $5 shall be assessed annually upon each delegate to the sessions of the Association, as well as upon each of its Permanent Members, whether attending or not, for the purpose of raising a fund to defray the necessary expenses of the Association, and for printing the Transactions. The payment of this sum shall be required of the delegates and members in attendance upon the sessions of the Association previously to their taking seats and participating in the business of the session. Permanent Members not attending shall forward their yearly dues to the Treasurer, and thereby shall be entitled to receive a copy of the printed Transactions the same as delegates.

"**Any Permanent Member who shall fail to pay his annual dues for THREE SUCCESSIVE YEARS, unless absent from the country, shall be dropped from the roll of Permanent Members.**"

Explanation.—P. signifies President; V. P., Vice-President; T., Treasurer; S., Secretary; L., Librarian; an obelisk [†] prefixed to a name denotes deceased. The figures at the end of each line denote the date of membership.

†Abbe, Alanson	Boston, Mass.	1860
†Abbott, James B. [d. 1869.]	Sanbornton, N. H.	1848
†Adams, Hiram [d. 1865]	Fabius, N. Y.	1860
†Adams, Horace W.	Boston, Mass.	1856
†Adams, Horatio [d. 1861]	Waltham, Mass.	1849
†Adams, Z. Boylston	Boston, Mass.	1847
Ader, Henry	Somerset, Ind.	1875
Adrain, James A.	Logansport, Ind.	1871
Agard, Aurelius H.	Sandusky, Ohio.	1863
Agnew, Cornelius R.	New York, N. Y.	1860
Agnew, D. Hayes	Philadelphia, Pa.	1872
Alba, E. M.	Williamsport, Pa.	1874
Albin, G. W.	Neoga, Ill.	1873
Alden, Ebenezer	Randolph, Mass.	1849
†Alexander, Ashton	Baltimore, Md.	1848
Alexander, J. A.	Broadway Depot, Va.	1873
Allen, Charles	Washington, D. C.	1866

Allen, Charles L.	Rutland, Vt.	1853
Allen, Ezra P.	Athens, Pa.	1860
Allen, G. P.	St. Louis, Mo.	1873
Allen, H. G.	Tilton, Ky.	1875
†Allen, Hiram [d. 1864]	Woonsocket, R. I.	1852
Allen, Joshua G.	Philadelphia, Pa.	1872
Allen, J. W.	Elkhart, Ind.	1874
Allen, Nathan	Lowell, Mass.	1849
Allen, R. H.	Dallas, Texas	1874
†Allen, W. H. [d. 1864]	Orono, Me.	1856
†Alley, John B. [d. 1862]	Boston, Mass.	1852
Allmond, R. J.	Palmyra, Ill.	1873
†Amerman, George K.	Chicago, Ill.	1863
Amery, S. A.	Cincinnati, O.	1870
Amory, Robert	Brookline, Mass.	1870
Anawalt, J. W.	Greensburg, Pa.	1872
Anderson, M. T.	Omaha, Neb.	1874
Anderson, R. S.	St. Louis, Mo.	1873
Anderson, Turner	Louisville, Ky.	1875
Anderson, Wm.	Indiana, Pa.	1868
Andrews, E.	Chicago, Ill.	1851
Andrews, Josiah	Pawpaw, Mich.	1874
Andrews, S. L.	Romeo, Mich.	1874
†Andrews, Robert [d. 1869]	Orange, Mass.	1866
Angear, J. J. M.	Ft. Madison, Iowa	1873
†Appleton, John [d. 1869]	Cambridgeport, Mass.	1867
Appley, W. L.	Cosbecton, N. Y.	1872
Armistead, W. H.	Vaiden, Miss.	1875
Armsby, James H.	Albany, N. Y.	1853
Armstrong, E. W.	Rochester, N. Y.	1855
Arnold, E. S. F.	Newport, R. I.	1863
Arnold, John	Rushville, Ind.	1875
Arnold, Richard Dennis, V. P.	Savannah, Ga.	1847
Arnold, S. R.	Monroe, Mich.	1856
Arnold, T. Allen	Columbia, Mo.	1873
Asdale, Wm. James	Pittsburg, Pa.	1869
Ashford, Francis A., L.	Washington, D. C.	1868
Ashhurst, John	Philadelphia, Pa.	1872
Ashmead, William	Philadelphia, Pa.	1847
Askew, Henry F., V. P., P.	Wilmington, Del.	1847
Atchinson, W. A.	Bowling Green, Ky.	1857

Atchison, J. B.	St. Joseph, Mo.	1873
Atchison, T. A.	Nashville, Tenn.	1875
Atkinson, William B., s.	Philadelphia, Pa.	1859
Atkisson, Frank	Shelbyville, Ky.	1874
Atlee, Washington L.	Philadelphia, Pa.	1847
†Aulick, R. V. [d. 1872]	Washington, D. C.	1872
†Ayres, Daniel [d. 1853]	Brooklyn, N. Y.	1847
Ayres, H. P.	Ft. Wayne, Ind.	1874
†Bache, Franklin [d. 1864]	Philadelphia, Pa.	1847
Backus, Chas. W.	Three Rivers, Mich.	1872
Bacon, Charles Giles	Fulton, N. Y.	1855
Bacon, C. P.	Evansville, Ind.	1874
†Baer, M. S.	Baltimore, Md.	1848
†Bailey, R. S.	Charleston, S. C.	1852
Bailey, Wm.	Louisville, Ky.	1875
Bailey, Wm. H.	Albany, N. Y.	1870
Baily, Jonathan R.	Ferguson's Station, Ky.	1858
Baird, George	Wheeling, W. Va.	1870
†Baker, Abraham H.	Cincinnati, Ohio	1850
†Baker, Alfred	Baltimore, Md.	1848
†Baker, Charles L. [d. 1859]	Lancaster, Pa.	1847
†Baker, George R. [d. 1866]	Wilmington, Del.	1847
Baker, Henry B.	Lansing, Mich.	1874
Baker, J.	Shelbyville, Ky.	1875
Baker, John W. H.	Davenport, Iowa	1860
Baker, L. H.	Payson, Ill.	1873
Baldwin, Wm. Owen, p.	Montgomery, Ala.	1868
Banks, James L.	New York, N. Y.	1864
Bankson, J. S.	Stevenson, Ala.	1875
Barbour, D. P.	Saginaw City, Mich.	1874
†Bare, A. S.	Lancaster, Pa.	1850
Barker, B. Fordyce	New York, N. Y.	1848
Barker, H. H.	Washington, D. C.	1872
Barnes, A. F.	St. Louis, Mo.	1873
Barnes, H. B.	Ionia, Mich.	1875
Barnum, Bolivar	Jackson, Mich.	1856
Barr, G. W.	Titusville, Pa.	1868
†Barrington, Samuel	U. S. Navy	1855
Barry, R. A.	New York, N. Y.	1865
†Barstow, Wm. A. [d. 1871]	San Francisco, Cal.	1871

Bartholow, Roberts	Cincinnati, Ohio	1867
†Bartlett, George [d. 1864]	Boston, Mass.	1849
Bartlett, John Knowlton, V. P.	Milwaukee, Wis.	1854
†Bartlett, Josiah [d. 1853]	Stratham, N. H.	1847
†Bartlett, Lyman [d. 1865]	New Bedford, Mass.	1849
†Barton, Edward H. [d. 1859]	New Orleans, La.	1848
†Baskin, George W.	Mercer, Pa.	1850
Bassett, Moses F.	Quincy, Ill.	1864
†Batchelder, John P. [d. 1868]	New York, N. Y.	1849
†Batcheller, Stephen [d. 1848]	Royalston, Mass.	1848
Bates, C. M.	San Francisco, Cal.	1871
†Bates, S. S. [d. 1873]	Titusville, Pa.	1868
Battey, Robert	Atlanta, Ga.	1875
Battles, W. S.	Shreve, Ohio	1872
Bauduy, J. K.	St. Louis, Mo.	1873
†Baumgarten, F. E. [d. 1869]	St. Louis, Mo.	1854
Baumgarten, Gustav	St. Louis, Mo.	1873
†Baxter, Hiram [d. 1865]	Stillwater, N. Y.	1849
Baxter, W. H.	Wilton, Iowa	1870
†Bay, William [d. 1865]	Albany, N. Y.	1853
†Bayless, G. W.	Louisville, Ky.	1859
Beach, Rollin E.	Patoka, Ill.	1874
†Beach, Samuel	Bridgeport, Conn.	1849
Beard, F. W.	Vincennes, Ind.	1872
Beard, Geo. M.	Brooklyn, N. Y.	1872
Beardsley, C. E.	Ottawa, Ohio	1874
†Beardsley, Levi	Oneida, N. Y.	1858
†Beardsley, Sheldon	North Brandford, Conn.	1849
Beck, J. R.	Ft. Wayne, Ind.	1873
†Beck, T. Romeyn [d. 1855]	Albany, N. Y.	1852
Beech, J. H.	Coldwater, Mich.	1854
Beeler, George	Clinton, Ky.	1868
Bell, A. Nelson	Brooklyn, N. Y.	1860
Bell, John	Benton Harbor, Mich.	1874
†Bell, John [d. 1872]	Philadelphia, Pa.	1847
†Bell, Luther V. [d. 1862]	Charleston, Mass.	1849
Bell, Wm. H.	Logansport, Ind.	1874
†Bellinger, John	Charleston, S. C.	1851
†Bemis, David	Chickopee, Mass.	1849
Benham, Silas N.	Pittsburg, Pa.	1868
†Bennett, Geo. C. [d. 1873]	Erie, Pa.	1867

Bennett, G. H.	Lima, N. Y.	1874
Bennett, John	Cleveland, Ohio	1874
Bennett, J. M.	Warren, Ohio	1874
Bentley, Edwin	U. S. Army	1871
Berry, Alfred T.	River Vale, Ind.	1874
Berry, J. T.	LaGrange, Ky.	1875
†Berry, William H. [d. 1859]	Washington, D. C.	1858
†Bertolet, P. G.	Oley, Pa.	1855
Bertolet, R. M.	Philadelphia, Pa.	1873
Beshoar, Michael	Trinidad, Col.	1874
Best, David	Meadville, Pa.	1874
†Bibb, Geo. Richard [d. 1874]	Denver, Col.	1869
†Bibbins, William B. [d. 1871]	New York, N. Y.	1864
†Bibighaus, C. H. [d. 1854]	Philadelphia, Pa.	1850
†Bickford, Alphonso [d. 1869]	Dover, N. H.	1865
Billings, John Shaw	Washington, D. C.	1868
Birney, Saml. H.	Urbana, Ill.	1873
Bishop, Timothy H.	New Haven, Conn.	1847
Bishop, S. P.	Delta, Ohio	1872
Bissell, D. H.	Geneseo, N. Y.	1874
Bixby, Geo. Holmes	Boston, Mass.	1875
Blachly, S. L.	Sparta, Pa.	1874
†Blackman, Geo. C. [d. 1871]	Cincinnati, Ohio	1867
Blackman, W. W.	West Mitchell, Iowa	1873
†Blair, Arba [d. 1863]	Rome, N. Y.	1860
†Blakeman, Rufus	Fairfield, Conn.	1860
Blakeman, William N.	New York, N. Y.	1847
Blakeslee, Edwin	Anamosa, Iowa	1873
Blalock, Nelson G.	Walla Walla, W. T.	1872
Blane, John	Perryville, N. J.	1855
†Blatchford, Thomas W., v. p. [d. 1865]	Troy, N. Y.	1847
Bliss, Lyman W.	Saginaw, Mich.	1874
Blitz, A.	Nashville, Tenn.	1875
Blount, R. F.	Wabash, Ind.	1875
†Bobbs, J. S. [d. 1870]	Indianapolis, Ind.	1867
Bodine, J. M.	Louisville, Ky.	1867
†Bohrer, Benjamin S. [d. 1862]	Georgetown, D. C.	1858
Boker, Charles S.	Philadelphia, Pa.	1864
Boisliniere, L. Chas.	St. Louis, Mo.	1873
Boland, H. A.	Lawrenceville, N. Y.	1874

†Boling, Wm. M., V. P.	Montgomery, Ala.	1855
†Bolles, Lucius S. [d. 1873]	Philadelphia, Pa.	1872
†Bolton, Jackson [d. 1866]	New York, N. Y.	1853
Bond, D. M.	Johnstown, Wis.	1874
†Bond, Henry [d. 1859]	Philadelphia, Pa.	1847
Bontecou, Reed B.	Troy, N. Y.	1853
Booe, T. N.	Loda, Ill.	1873
Book, J. B.	Detroit, Mich.	1870
Booth, David Winfield	Vicksburg, Miss.	1869
Borrowman, Andrew	Detroit, Mich.	1874
Bottum, E. W.	Lyons, N. Y.	1874
†Boucher, James H. [d. 1874]	Iowa City, Iowa	1860
Bowditch, Henry I., S., V. P.	Boston, Mass.	1848
Bowen, G. W.	Toledo, Ohio	1874
†Bowen, Samuel	Thompson, Conn.	1849
Bowers, Jacob E.	St. Peter, Minn.	1874
Bowling, Wm. Kendall, V. P., P.	Nashville, Tenn.	1854
Boyd, John M.	Knoxville, Tenn.	1857
†Boyden, Frederick [d. 1872]	Hinsdale, N. H.	1855
Boyer, Pierre Caverly	New Orleans, La.	1869
Bozeman, Nathan	New York, N. Y.	1858
Brady, John	Grand Rapids, Mich.	1874
Brady, John A.	Brooklyn, N. Y.	1856
Brainard, A. C.	Orangeville, Ohio	1873
†Brainard, Daniel, V. P. [d. '66]	Chicago, Ill.	1850
Brandeis, Samuel	Louisville, Ky.	1875
Brandt, E. B.	Mechanicsburg, Pa.	1872
†Breckinridge, R. J., V. P. [d. '67]	Louisville, Ky.	1850
Breed, S. P.	Princeton, Ill.	1870
Brehman, G. Edmund	Altoona, Pa.	1870
Breinig, P. B.	Bethlehem, Pa.	1865
Brewington, W. J.	Celina, Ohio	1874
Brennan, W. N.	St. Louis, Mo.	1873
Breysacher, A. L.	Little Rock, Ark.	1873
Briggs, Chas. E.	St. Louis, Mo.	1873
Briggs, Wm. Thompson, V. P.	Nashville, Tenn.	1869
†Brinsmade, T. C. V. P. [d. 1868]	Troy, N. Y.	1848
†Briscoe, John Hanson	Baltimore, Md.	1847
Brock, Hugh W.	Morgantown, W. Va.	1870
Brodie, Wm., S., V. P.	Detroit, Mich.	1854
Brokaw, F. V. L.	St. Louis, Mo.	1873

Bronson, John R.	Attleboro', Mass.	1860
Brooks, J. G.	Paducah, Ky.	1875
†Brooks, P. B.	Binghamton, N. Y.	1853
Broome, Geo. W.	Moberly, Mo.	1873
Brown, Hawkins	Hustonville, Ky.	1870
Brown, H. W., v. p.	Waco, Texas	1874
Brown, James	Chester, N. H.	1874
Brown, James A.	Detroit, Mich.	1873
†Brown, Thomas	Manchester, N H.	1849
Brown, W. Owen	Providence, R. I.	1855
Brown, W. T.	Cincinnati, Ohio	1867
Browne, M. S.	Mt. Olivet, Ky.	1874
†Browne, O. A. [d. 1855]	Hicksford, Va.	1852
Browne, R. H.	Kirksville, Mo.	1873
Brownfield, J. H.	Fairmont, W. Va.	1873
†Brownell, Clarence M. [d. '62]	East Hartford, Conn.	1853
†Brownell, Richmond	Providence, R. I.	1853
†Brownell, Russ B. [d. 1867]	New York, N. Y.	1864
Brownell, Wm.	Utica, Mich.	1874
Bruebach, G. T.	Ft. Wayne, Ind.	1875
Bruehl, Gustavus	Cincinnati, Ohio	1871
Brumbaugh, A. B.	Huntingdon, Pa.	1872
Bruner, Daniel J.	Columbia, Pa.	1871
Brumme, Carl	Detroit, Mich.	1874
Brush, E. N.	Buffalo, N. Y.	1874
Bryant, J. H.	Huntingburg, Ind.	1875
†Buchtel, J. B. [d. 1870]	Des Moines, Iowa	1863
†Buck, Ephraim [d. 1859]	Boston, Mass	1849
Buck, Fred. J.	Philadelphia, Pa.	1874
Buck, Gurdon	New York, N. Y.	1848
Buckham, T. R.	Flint, Mich.	1874
Bucklin, Daniel D.	Lansingburg, N. Y.	1870
Buckner, G. D.	Lexington, Ky.	1875
Buckner, James H.	Cincinnati, Ohio	1864
Bulkeley, J. E.	Wilkesbarre, Pa.	1872
†Bulkley, Henry D. [d. 1872]	New York, N. Y.	1847
Bulkley, L. Duncan	New York, N. Y.	1874
Bull, C. S.	New York, N. Y.	1873
†Bullard, Talbut [d. 1863]	Indianapolis, Ind.	1851
Bullock, Otis	Warren, R. I.	1864
Buor, Walter A.	Cadiz, Ind.	1875

Burdett, S. L.	Lancaster, Ky.	1873
Burge, J. H. Hobart	Brooklyn, N. Y.	1857
Burns, Robert	Philadelphia, Pa.	1865
†Burr, David Silliman [d. '65]	Westport, Conn.	1855
Burrall, Fred. A.	New York, N. Y.	1872
†Burrowes, Francis S.	Lancaster, Pa.	1848
†Burton, C. V. W. [d. 1860]	Lansingburg, N. Y.	1849
Burton, E. D.	Collamer, Ohio	1874
Burton, G. W.	Mitchell, Ind.	1874
Burton, Mathew Henry	Troy, N. Y.	1869
†Burwell, Bryant	Buffalo, N. Y.	1847
Busey, Samuel C.	Washington, D. C.	1870
†Bush, James Miles [d. 1875]	Lexington, Ky.	1850
Bush, Lewis P.	Wilmington, Del.	1847
†Butler, A. B.	Richmond, Ind.	1859
†Butler, S. W. [d. 1874]	Philadelphia, Pa.	1853
Butterfield, H. L.	Waupun, Wis.	1874
†Butterfield, John	Columbus, Ohio	1847
Buttermore, S.	Cornellsville, Pa.	1874
Byford, Henry T.	Denver, Col.	1874
Byford, William H., V. P.	Chicago, Ill.	1854
Byrd, W. A.	Ursa, Ill.	1873
Byrne, John	Brooklyn, N. Y.	1864
Byrne, James F.	Murfreesboro', Tenn.	1875
Byrnes, T.	Wolcott, Iowa	1873
†Cabaniss, Alfred Barwell [d. 1871]	Jackson, Miss.	1866
Caball, J. L.	Carlottesville, Va.	1855
Cady, W. F.	Lafayette, Ind.	1873
†Calkins, A. R. [d. 1873]	Allegan, Mich.	1872
Calkins, Marshall	Springfield, Mass.	1866
Callaway, J. M.	Galveston, Texas	1875
Calvin, D. M.	Meadville, Pa.	1870
†Cammann, G. P.	New York, N. Y.	1853
Campbell, G. T.	Skaneateles, N. Y.	1874
Canfield, Joel	New Haven, Conn.	1874
†Canfield, J. W.	Morristown, N. J.	1849
Cannon, E. B.	Suscola, Ill.	1873
Capron, George	Providence, R. I.	1849
†Carey, Abel [d. 1872]	Salem, Ohio	1855

Caro, Sylvatora	New York, N. Y.	1872
Carpenter, A. M.	Keokuk, Iowa	1873
Carpenter, E. W.	Brooklyn, N. Y.	1872
Carpenter, Henry	Lancaster, Pa.	1847
Carpenter, Horace	Salem, Oregon	1860
†Carpenter, James S. [d. 1872]	Pottsville, Pa.	1849
†Carpenter, Wm. M.	New Orleans, La.	1847
Carr, A. F.	Goffstown, N. Y.	1874
†Carr, Edson [d. 1861]	Canandaigua, N. Y.	1848
Carr, Jas. A.	Princeton, Ky.	1875
†Carr, John	Sanbornton, N. H.	1849
Carrick, A. L.	Cincinnati, Ohio	1867
Carrington, C.	Farmington, Ct.	1872
†Carrington, Edwin W.	Farmington, Conn.	1849
Carson, N. B.	St. Louis, Mo.	1873
Carson, William	Cincinnati, Ohio	1850
Carter, Charles	Philadelphia, Pa.	1872
Carter, D. D.	Versailles, Ky.	1872
Carter, Geo. W.	Marshaltown, Iowa	1875
Cartwright, H. R.	Rich Pond, Ky.	1873
†Cash, Merritt H. [d. 1861]	Ridgebury, N. Y.	1852
†Cassidy, Patrick [d. 1865]	Lancaster, Pa.	1853
†Casslebury, Isaac	Evansville, Ind.	1873
†Castle, Andrew	Woodbridge, Conn.	1853
Castlehun, F. C.	St. Louis, Mo.	1871
Catherwood, T. L.	Moeaqua, Ill.	1873
Catlin, Benjamin H., V. P.	West Meriden, Conn.	1853
Center, Geo. F.	Evansville, Ind.	1873
Chadwick, Jas. Reed	Boston, Mass.	1875
Chambers, Wm. Mortimer	Charleston, Ill.	1852
Chancellor, J. Edgar	Charlottesville, Va.	1875
Chapin, A. B.	Flint, Mich.	1874
Chapin, E. R.	Grass Lake, Mich.	1874
†Chapman, Nathaniel, P.[d.'53]	Philadelphia, Pa.	1847
Chase, Byron S.	Akron, Ohio	1875
†Chase, Charles	Deerfield, N. H.	1849
Chase, H. H.	Salem, Ind.	1875
Chase, S. B.	Osage, Iowa	1873
†Cheeny, L. P. [d. 1863]	Chicago, Ill.	1863
†Cheeseman, Jno C. [d. 1862]	New York, N. Y.	1853
Cheeseman, T. M.	New York, N. Y.	1872

Chenoweth, W. J.	Decatur, Ill.	1872
†Chew, Samuel [d. 1863]	Baltimore, Md.	1847
†Childs, Henry H. [d. 1868]	Pittsfield, Mass.	1849
†Childs, Timothy	Pittsfield, Mass.	1860
Chittock, Gordon	Jackson, Mich.	1873
Christian, M. P.	Lynchburg, Va.	1868
Chubbuck, H. S.	Elmira, N. Y.	1874
†Church, William Henry	New York, N. Y.	1853
Claflin, N. H.	East Saginaw, Mich.	1874
†Clanton, S. W.	Warsaw, Ala.	1854
†Clapp, Asahel [d. 1862]	New Albany, Ind.	1850
Clapp, Horace C.	Mendon, Mich.	1874
Clark, Alonzo	New York, N. Y.	1847
Clark, Dugan	Richmond, Ind.	1873
Clark, Haymond W.	Noblesville, Ind.	1874
Clark, Jos. E.	Brooklyn, N. Y.	1870
†Clark, Moses	East Cambridge, Mass.	1853
Clarke, E. H.	Boston, Mass.	1875
†Clarke, J. Henry [d. 1869]	Newark, N. J.	1851
Clay, T. J.	St. Louis, Mo.	1874
Cleaver, H. T.	Keokuk, Iowa	1874
Cleeman, Richard A.	Philadelphia, Pa.	1872
Clendenin, W.	Cincinnati, O.	1873
†Cleveland, Hiram	North Providence, R. I.	1853
†Clifford, Lewis W.	Providence, R. I.	1847
Cluness, Wm. Robert	Sacramento, Cal.	1871
Clymer, George	U. S. Navy	1858
†Coad, Joseph R. [d. 1868]	Philadelphia, Pa.	1865
†Coale, William Edw. [d. 1863]	Boston, Mass.	1849
Coblentz, Joseph	Reading, Pa.	1872
Cochran, Jerome	Mobile, Ala.	1869
Cochran, W. G.	Farmer City, Ill.	1873
†Cock, Thomas [d. 1869]	New York, N. Y.	1847
Cock, Thomas F.	New York, N. Y.	1848
†Cockcroft, James	New York, N. Y.	1853
†Coe, A. B. [d. 1854]	Oswego, N. Y.	1853
Cohen, L. H.	Quincy, Ill.	1873
†Cole, N. W.	Burlington, N. J.	1847
Cole, W. C.	Lynville, Ill.	1873
†Coleman, Isaac P. [d. 1869]	Pemberton, N. J.	1855
Coleman, Ruffin	Athens, Ala.	1875

Collings, S. P.	Indianapolis, Ind.	1874
Collins, George Lewis	Providence, R. I.	1849
Collins, James	Philadelphia, Pa.	1868
†Collins, John L. [d. 1874]	Mobile, Ala.	1873
Comegys, Cornelius G.	Cincinnati, Ohio	1853
Compton, Wm. McCorkle	Jackson, Miss.	1869
†Conant, D. S. [d. 1865]	New York, N. Y.	1855
†Condict, Lewis, V. P.	Morristown, N. J.	1853
†Condie, D. Francis, T. [d. '75]	Philadelphia, Pa.	1847
Conklin, Gustav	Orwell, Pa.	1874
Conklin, S. A.	Canton, Ohio	1873
Conner, Leartus	Detroit, Mich.	1874
Conner, P. S.	Cincinnati, Ohio	1867
†Connolly, James J. [d. 1871]	New York, N. Y.	1864
†Conrey, Jno.	Manayunk, Pa.	1855
†Conway, James H.	Richmond, Va.	1860
†Cook, Chas.	Jersey City, N. J.	1853
Cook, Geo. J.	Louisville, Ky.	1873
†Coolidge, R. Hoffman [d. '66]	Washington, D. C.	1853
Coombs, S. W.	Bowling Green, Ky.	1875
Coope, A. F.	Flushing, Mich.	1874
Cooper, E. H.	Henderson, Ill.	1873
†Cooper, James S. [d. 1867]	New York, N. Y.	1853
Cooper, John M.	Wellsburg, W. Va.	1870
†Cooper, Richard M. [d. 1874]	Camden, N. J.	1847
Cooper, W. H.	St. Louis, Mo.	1873
Corcoran, G. L.	Brimfield, Ill.	1873
Corliss, Hiram	Greenwich, N. Y.	1847
†Cornish, Aaron	New Bedford, Mass.	1849
Corson, Hiram	Plymouth Meeting, Pa.	1847
†Cotes, John	Batavia, N. Y.	1858
Cotes, Levant B.	Batavia, N. Y.	1856
Cotton, J. C.	Meadville, Pa.	1874
†Couper, James, V. P. [d. 1865]	New Castle, Del.	1847
Cowan, Frank	Greensburg, Pa.	1874
Cowan, George	Danville, Ky.	1867
Cowan, John A.	Auburn, Ind.	1873
Cowan, R. S.	Girard, Ill.	1873
Cowden, J. W.	Bellevue, Iowa	1870
Cowling, Richard O.	Louisville, Ky.	1873
Craig, Alexander	Columbia, Pa.	1870

†Craig, John W. [d. 1863]	Plainfield, N. J.	1853
Craig, S. P.	Stanford, Ky.	1875
Craighead, R. D.	Indianapolis, Ind.	1874
Crampton, O. L.	Mobile, Ala.	1872
†Crandell, C. Milford [d. 1867]	Belfast, N. Y.	1853
Crary, C. W.	St. Louis, Mo.	1873
Cravens, T. A.	Bloomfield, Ind.	1875
Crawford, J. B.	Wilkesbarre, Pa.	1872
Crawford, J. S.	Williamsport, Pa.	1872
Crawford, Robert	Cooperstown, Pa.	1870
Crawford, S. K.	Monmouth, Ill.	1873
Crim, L. A.	Tunnelton, Ind.	1875
Crippen, E. H.	Moscow, Ind.	1873
Crist, David L.	Bloomington, Ill.	1865
†Crosby, A. B. [d. 1875]	Brooklyn, N. Y.	1872
Cross, E. C.	Rochester, Minn.	1872
Cross, W. C.	Cherokee, Ala.	1875
Crouse, D. W.	Waterloo, Iowa	1874
Culbertson, H.	Zanesville, Ohio	1872
Cummings, David J.	Houston, Ind.	1875
Cummings, James	Wheeling, W. Va.	1870
†Cummings, Robert Hazlett [d. 1873]	Wheeling, W. Va.	1868
Cunningham, F. D.	Richmond, Va.	1873
†Cunningham, Oliver [d. '60]	Beaver, Pa.	1858
†Currey, R. O.	Knoxville, Tenn.	1857
†Curtis, Edward M. [d. 1875]	Sacramento, Cal.	1871
Curtman, Chas. O.	St. Louis, Mo.	1873
Curwen, John	Harrisburg, Pa.	1870
Cuthbert, Wm. L.	Monmouth, Ill.	1873
†Cutter, Benjamin	Woburn, Mass.	1849
Cutter, Ephraim	Woburn, Mass.	1871
†Cutter, Nehemiah	Pepperell, Mass.	1847
Dabney, W. C.	Charlottesville, Va.	1875
†Dailey, E. D.	Smyrna, Del.	1858
†Dalton, Jno. C. [d. 1864]	Lowell, Mass.	1848
Dalton, R. H.	St. Louis, Mo.	1873
Damon, Howard F.	Boston, Mass.	1864
†Dana, A. G.	Brandon, Vt.	1849
Dancy, Francis William	Holly Springs, Miss.	1869

†Darlington, Wm. [d. 1863]	Westchester, Pa.	1851
†Davis, Charles A.	Chelsea, Mass.	1853
Davis, C. W.	Indianola, Iowa	1873
Davis, Nathan Smith, V. P., P.	Chicago, Ill.	1847
Davis, R. P.	Redkey, Ind.	1874
†Davis, Robert T.	Fall River, Mass.	1855
Davison, J. B.	Moline, Ill.	1873
Day, Alfred	Mechanicsburg, Pa.	1874
Day, W. C.	Palmyra, Ill.	1873
†Dawson, Jno. [d. 1867]	Columbus, Ohio	1855
Dawson, W. W.	Cincinnati, O.	1875
Dean, D. V.	St. Louis, Mo.	1873
Dean, Henry W.	Rochester, N. Y.	1855
Dearborn, S. G.	Nashua, N. H.	1875
†De Bruler, James P. [d. 1874]	Evansville, Ind.	1867
De Camp, Wm. H.	Grand Rapids, Mich.	1867
†Delany, M. G.	United States Navy	1849
Deming, H. H.	Pana, Ill.	1873
Denison, Chas.	Denver, Col.	1875
Dent, W. Marmaduke	Newburg, W. Va.	1870
†Dering, Nicoll H. [d. 1867]	Utica, N. Y.	1849
Deshler, Chas. F.	Hightstown, N. J.	1874
Dewey, S. J.	Breckenridge, Mo.	1873
Dibrell, J. A., Jr.	Little Rock, Ark.	1875
†Dickson, James H. [d. 1863]	Wilmington, N. C.	1852
†Dickson, Samuel H. [d. 1872]	Philadelphia, Pa.	1851
Didama, Henry D., V. P.	Syracuse, N. Y.	1864
Dillard, John	Lexington, Ky.	1869
†Dillard, Thomas [d. 1870]	Philadelphia, Pa.	1855
Dills, Thos. J.	Fort Wayne, Ind.	1875
†Dilworth, Samuel	Pittsburg, Pa.	1850
Dimmitt, J. P.	Clinton, Mo.	1873
Dimmitt, P.	Shelbyville, Mo.	1873
†Dodge, J. S. [d. 1872]	Cincinnati, Ohio	1850
Dodson, N. M.	Berlin, Wis.	1872
†Donaghe, William R.	New York, N. Y.	1860
Donelan, E. A.	St. Joseph, Mo.	1873
†Donoughue, Eugene O. [d.'67]	Bergen, N. Y.	1853
Dora, J. W.	Mattoon, Ill.	1873
†Dorsey, Lloyd	Frederick, Md.	1848
Dougherty, B. A.	Cumberland, Md.	1872

Douglas, George	Oxford, N. Y.	1869
Douglas, W. M.	Toledo, O.	1874
Douglass, S. H.	Ann Arbor, Mich.	1856
†Dove, George M. [d. 1874]	Washington, D. C.	1853
Dowell, Greensville	Galveston, Texas	1866
†Dowler, Bennet	New Orleans, La.	1850
Downes, Charles S.	Nottingham, N. H.	1864
†Downes, John K.	New Haven, Conn.	1855
†Drake, Daniel	Cincinnati, Ohio	1850
Drake, O. L.	Slaughterville, Ky.	1875
†Drayton, Henry E. [d. 1862]	Philadelphia, Pa.	1851
Drysdale, Thomas M.	Philadelphia, Pa.	1873
Du Bois, H. G.	Camden, N. Y.	1874
†Duffield, Samuel	Lancaster, Pa.	1847
Dunahue, Henry James	Sandusky, Ohio	1856
†Dunbar, Jno. R. W. s. [d. 1871]	Baltimore, Md.	1847
Duncan, W. S.	Brownsville, Pa.	1870
Dundore, A. B.	Reading, Pa.	1873
Dungan, David H.	Little Rock, Ark.	1873
Dunglison, Richard J.	Philadelphia, Pa.	1874
†Dunglison, Robley [d. 1869]	Philadelphia, Pa.	1857
Dunlap, A.	Springfield, O.	1873
Dunlap, A. S.	Dayton, O.	1875
Dunlap, C. W.	Springfield, Ohio	1872
Dunlap, Richard William	Danville, Ky.	1869
†Dwight, W. C.	Moscow, N. Y.	1853
†Dwight, William W.	New York, N. Y.	1860
Easley, E. T.	Dallas, Texas	1874
Eastman, Joseph	Brownsburg, Ind.	1873
Edgar, W. S.	St. Louis, Mo.	1854
Edwards, R. A.	Wallon, Ky.	1850
†Elbert, John D. [d. 1866]	Keosaqua, Iowa	1854
Eliot, Johnson	Washington, D. C.	1858
Elliott, Cyrenus	Wadesville, Ind.	1875
†Elliot, George T., Jr. [d. 1871]	New York, N. Y.	1855
Elliott, Thomas A.	Orangeburg, S. C.	1851
Elliott, Wm.	White Pigeon, Mich.	1874
†Ellis, J. James	Bristol, R. I.	1860
Ellsberry, W. T.	Georgetown, O.	1875
Elmer, H. W.	Trenton, N. J.	1870

Elsberg, Louis	New York, N. Y.	1864
Elsner, John	Denver, Col.	1871
†Elsten, W. P. [d. 1872]	Columbia, Ohio	1867
Elstun, W. J.	Indianapolis, Ind.	1875
†Ely, Edward [d. 1860]	New Hope, Pa.	1850
Ely, W. W.	Rochester, N. Y.	1856
Emanuel, A. D.	Antwerp, Ohio	1875
Emanuel, Manley	Philadelphia, Pa.	1855
Engleman, Geo. J.	St. Louis, Mo.	1873
†Enos, De Witt C. [d. 1869]	Brooklyn, N. Y.	1856
Erwin, A. J.	Mansfield, Ohio	1874
Eshleman, Isaac Stouffer	Philadelphia, Pa.	1869
Essig, N. Fred.	Plattsburg, Mo.	1875
†Evans, Asbury	Covington, Ky.	1850
Evans, C. H.	Cairo, Ill.	1873
Evans, Warwick	Washington, D. C.	1870
Evans, W. C.	Kansas City, Mo.	1873
Eve, Joseph A.	Augusta, Ga.	1848
Eve, Paul Fitzsimons, V. P., P.	Nashville, Tenn.	1848
Everhard, N. S.	Wadsworth, Ohio	1874
†Everett, S. W. [d. 1862]	Quincy, Ill.	1856
†Eversfield, Charles [d. 1873]	U. S. Navy	1864
Evans, Thomas B.	Baltimore, Md.	1872
Ewing, John	Monmouth, Ill.	1873
Faber, John E.	St. Louis, Mo.	1873
Fairbank, Henry Carleton	Flint, Mich.	1869
Fairchild, B. H.	Niles, Mich.	1874
Fairchild, David S.	Ames, Iowa	1874
Falley, John W.	Hillsdale, Mich.	1875
Farnham, Horace P.	New York, N. Y.	1864
Fares, J. B.	Romeo, Mich.	1874
Farnsworth, P. J.	Clinton, Iowa	1873
Farrand, D. O.	Detroit, Mich.	1874
Fasquielle, Louis W.	St. John's, Mich.	1874
Fay, John	Williamsburg, Pa.	1858
Fearing, Elisha P.	Nantucket, Mass.	1849
Feehan, E. L.	St. Louis, Mo.	1873
Feicht, B.	Allegheny City, Pa.	1872
Felker, J. B.	Amboy, Ill.	1875
Fenner, C. S.	Louisville, Ky.	1875

†Fenner, E. D., V. P. [d. 1866]	New Orleans, La.	1851
Ferguson, James	Glen's Falls, N. Y.	1864
Fessenden, C. S. D.	Portland, Me.	1853
†Fernald, John S.	Dover, N. H.	1849
Field, C. C.	Leominster, Mass.	1864
Field, N.	Jeffersonville, Ind.	1873
Findley, Wm. Martin	Altoona, Pa.	1869
Finley, S. Moore	Harrisburg, Pa.	1872
Finnell, Thomas C.	New York, N. Y.	1855
Firey, J. J.	Taylorsville, Ill.	1873
Firmin, F. W.	Findlay, Ohio	1875
Fischer, Emil	Philadelphia, Pa.	1868
†Fish, Augustine H. [d. 1872]	Philadelphia, Pa.	1858
†Fishback, Charles [d. 1861]	Shelbyville, Ind.	1859
Fisher, Alexander	Chicago, Ill.	1863
Fisher, C.	Jacksonville, Ill.	1873
Fisher, Charles H.	North Scituate, R. I.	1858
Fisher, George J.	Sing Sing, N. Y.	1858
Fiske, I. W.	Kalamazoo, Mich.	1873
†Fisler, Samuel P. [d. 1875]	Clayton, N. J.	1870
Fitch, Geo. A.	Washington, D. C.	1870
Fitch, Simon	New York, N. Y.	1870
Fitch, Thomas Davis	Chicago, Ill.	1856
†Flagg, Beling	Charleston, S. C.	1851
Flagler, Thos. B.	Morristown, N. J.	1875
Flanner, Thos. U.	Springfield, Mo.	1873
Flint, Austin, V. P.	New York, N. Y.	1847
Flint, Austin, Jr.	New York, N. Y.	1860
Flint, John S.	Boston, Mass.	1865
†Folsom, Levi	New York, N. Y.	1855
†Fonerden, John [d. 1869]	Baltimore, Md.	1848
†Foote, H. E. [d. 1871]	Cincinnati, Ohio	1859
Forbes, Samuel F.	Toledo, Ohio	1874
Ford, Corydon L.	Ann Arbor, Mich.	1874
†Ford, John D. [d. 1867]	Winona, Minn.	1855
Ford, Sample	Wheeling, W. Va.	1875
Foreman, J. M.	Jonesburgh, Mo.	1873
Forrester, Wm.	Louisville, Ky.	1875
Forsee, E. B.	St. Louis, Mo.	1875
Forsyth, F. F.	Weymouth, Mass.	1870
Forsyth, James B.	Weymouth, Mass.	1850

Fort, J. M.	Paris, Texas	1875
Forwood, J. F. M.	Chester, Pa.	1873
Foster, F. P.	New York, N. Y.	1872
Foster, L.	Otsego, Mich.	1874
Foulke, Joseph	Buckingham, Pa.	1872
†Fountain, E. J. [d. 1862]	Davenport, Iowa	1860
†Fowler, Ezekiel [d. 1863]	Woonsocket Falls, R. I.	1848
†Francis, E. C. [d. 1856]	Keokuk, Iowa	1856
†Francis, John W. [d. 1861]	New York, N. Y.	1847
Franzoni, C. W.	Washington, D. C.	1872
French, Jno. O.	Hanover, Mass.	1854
†Frick, Charles [d. 1860]	Baltimore, Md.	1855
Fricke, Albert	Philadelphia, Pa.	1872
Frierwood, Ezra K.	North Grove, Ind.	1875
†Fries, George [d. 1866]	Cincinnati, Ohio	1850
Frissell, John	Wheeling, W. Va.	1850
†Fronefield, Charles	Philadelphia, Pa.	1849
†Frost, Henry R., V. P. [d. 1866]	Charleston, S. C.	1849
Frothingham, G. E.	Ann Arbor, Mich.	1874
Furley, C. C.	Wichita, Kansas	1875
Gadbury, Wm. Young, V. P.	Yazoo City, Miss.	1869
Gaillard, Edwin Samuel	Louisville, Ky.	1869
†Gaillard, Peter Cordes	Charleston, S. C.	1848
Gaines, Edmund Pendleton	Mobile, Ala.	1869
Gale, R. H.	Louisville, Ky.	1873
†Gallaher, William [d. 1860]	Philadelphia, Pa.	1858
Gallaher, Thos. J.	Pittsburg, Pa.	1866
Galt, T.	Rock Island, Ill.	1873
Gamble, Jas.	Le Claire, Iowa	1875
Garcelon, Alonzo	Lewiston, Me.	1873
Gardiner, B. F.	Chattanooga, Tenn.	1873
†Gardner, E. C. [d. 1870]	Vermont, Ill.	1863
†Gardner, Johnson	Providence, R. I.	1860
Garnett, Alexander Y. P.	Washington, D. C.	1852
Garrish, John Pool	New York, N. Y.	1853
†Gaston, Ephraim	Morristown, Ohio	1858
Gates, Horatio S.	San Francisco, Cal.	1871
Gates, V. B.	San Francisco, Cal.	1871
Gaylord, Edwin	Chicago, Ill.	1874
Gaylord, L. Merriman	Sodus, N. Y.	1860

†Gazzam, Joseph P.	Pittsburg, Pa.	1853
Geare, Fred.	Ogdensburg, N. Y.	1874
†Gebhard, Lewis P. [d. 1873]	Philadelphia, Pa.	1864
Geddings, E., v. p.	Charleston, S. C.	1851
Gehrung, Eugene C.	Denver, Col.	1873
Geibner, E. X.	Sandy Lake, Pa.	1874
†Gerhard, Wm. W. [d. 1872]	Philadelphia, Pa.	1848
Gerrish, Jas. W. F.	Seymour, Ind.	1875
†Gibbon, J. H. [d. 1869]	Charlotte, N. C.	1858
†Gibson, Charles Bell [d. 1865]	Richmond, Va.	1847
†Gibson, William [d. 1868]	Philadelphia, Pa.	1848
†Gilbert, David [d. 1868]	Philadelphia, Pa.	1850
Gilchrist, Robert S.	De Graff, Ohio	1850
Gillett, Buckland	Franklin, Pa.	1869
†Gilman, Chandler R. [d. 1866]	New York, N. Y.	1847
Glasgow, W. C.	St. Louis, Mo.	1875
Gobrecht, Wm. H.	Philadelphia, Pa.	1858
†Goddard, Paul Beck [d. 1866]	Philadelphia, Pa.	1855
Golding, Walter S.	St. Louis, Mo.	1854
†Gooch, P. Claiborne, s.	Richmond, Va.	1851
Goodell, Wm.	Philadelphia, Pa.	1872
Goodrich, C. G.	Minneapolis, Minn.	1872
†Goodsell, Thomas [d. 1864]	Utica, N. Y.	1849
Goodwillie, D. H.	New York, N. Y.	1872
Gordon, Thos. W.	Georgetown, Ohio	1875
Gorgas, A. C., U. S. N.	Annapolis, Md.	1875
†Gould, Augustus A. [d. 1866]	Boston, Mass.	1849
Gouley, J. W. S.	New York, N. Y.	1873
†Gourdin, Samuel	New Haven, Conn.	1858
Govan, Wm.	Stony Point, N. Y.	1860
Graff, Milton B.	Cincinnati, Ohio	1865
†Grafton, Thomas J.	Rodney, Miss.	1854
†Graham, J. N.	Chicago, Ill.	1859
Graham, W. B.	Noblesville, Ind.	1875
Grant, J. F.	Pulaski, Tenn.	1875
†Grant, Wm. R. [d. 1852]	Philadelphia, Pa.	1848
Grant, W. W.	Davenport, Iowa	1873
Gray, E. W.	Bloomington, Ill.	1873
Gray, John P.	Utica, N. Y.	1870
Gray, J. M.	Noblesville, Ind.	1875
Gray, John W.	Bloomfield, Ind.	1875

Gray, S. S.	Piqua, Ohio	1873
Green, Caleb	Homer, N. Y.	1853
Green, Francis C.	E. Hampton, Mass.	1860
Green, George W.	Hudson, Mich.	1874
†Green, Horace [d. 1866]	New York, N. Y.	1847
†Green, Isaac [d. 1864]	New York, N. Y.	1847
†Green, John, V. P.	Worcester, Mass.	1848
Green, John	St. Louis, Mo.	1873
Green, James S.	Elizabeth, N. J.	1872
Green, Traill	Easton, Pa.	1853
Greenshields, Wm.	Romeo, Mich.	1874
Gregg, J. S.	Ft. Wayne, Ind.	1867
Gregory, E. H.	St. Louis, Mo.	1872
Griffin, E. L.	Fond-du-Lac, Wis.	1874
Griffiths, T. J.	Louisville, Ky.	1874
Grimes, Lewis A.	Concord, Ky.	1875
†Griscom, John H. [d. 1873]	New York, N. Y.	1847
Griswold, E.	Sharon, Pa.	1872
Gronard, John Hanson	Allegheny City, Pa.	1869
Gross, Samuel D.	Philadelphia, Pa.	1850
Grove, J. H.	Philadelphia, Pa.	1867
Grover, G. W.	Sheffield, Mass.	1874
Gruwell, J. P.	Des Moines, Iowa	1873
Gunn, Moses	Chicago, Ill.	1874
Gustin, W. C.	Detroit, Mich.	1874
Guth, I. J.	Peoria, Ill.	1872
Haggerty, R. J.	Elkhart, Ind.	1874
†Halberstadt, George	Pottsville, Pa.	1855
†Hale, Enoch [d. 1848]	Boston, Mass.	1848
Hale, Josiah	Owensboro, Ky.	1869
†Hall, Charles	Burlington, Vt.	1847
Hall, Daniel	Saline, Mich.	1874
†Hall, Edward [d. 1870]	Auburn, N. Y.	1860
Hall, Eleazer	Saline, Mich.	1875
†Hall, Eli	East Hartford, Conn.	1849
Haller, F. B.	Vandalia, Ill.	1859
†Hallowell, Edward	Philadelphia, Pa.	1849
Halsey, Calvin C.	Montrose, Pa.	1864
†Halsey, W. S. [d. 1874]	Philadelphia, Pa.	1858
Hamill, R. C.	Chicago, Ill.	1863

†Hamilton, Cyrus B.	Lyme, N. H.	1849
Hamilton, George	Philadelphia, Pa.	1872
Hamilton, Horace	McGregor, Iowa	1865
Hamilton, John L.	Peoria, Ill.	1875
Hamilton, J. S.	Tecumseh, Mich.	1874
Hamilton, Joseph Ormond	Jerseyville, Ill.	1867
Hamilton, Wm.	Galesburg, Ill.	1873
†Hampton, Isaac H.	Bridgeton, N. J.	1855
Hancock, Alfred	Millville, Ohio	1875
†Hancock, F. W. [d. 1865]	Richmond, Va.	1852
Hand, D. W.	St. Paul, Minn.	1860
†Handy, John H. [d. 1853]	Philadelphia, Pa.	1848
†Handy, Samuel K. [d. 1859]	Princess Anne, Md.	1848
Hanna, W. M.	Henderson, Ky.	1873
Hansman, Theodore	Washington, D. C.	1868
Harding, Myron H.	Lawrenceburg, Ind.	1859
Hardy, Benjamin F.	San Francisco, Cal.	1871
Harlan, David, U. S. N.	Churchville, Md.	1866
†Harpur, John	Sandwich, Mass.	1849
†Harriman, H. C. [d. 1863]	Jerseyville, Ill.	1856
†Harris, Chapin A.	Baltimore, Md.	1848
Harris, Elisha	New York, N. Y.	1853
Harris, E. M.	Providence, R. I.	1873
†Harrison, David	Middletown, Conn.	1855
Harrison, E. B.	Napoleon, Ohio	1874
†Harrison, J.	New Orleans, La.	1847
†Harrison, John Pollard, V. P. [d. 1848]	Cincinnati, Ohio	1848
†Harry, Samuel M. [d. 1868]	Bayview, Md.	1866
Hart, B. F.	Marietta, Ohio	1872
†Hart, John [d. 1867]	New York, N. Y.	1849
Hart, Samuel	Brooklyn, N. Y.	1849
Hartley, J. D.	Fort Wayne, Ind.	1874
Hartman, Andrew	Baltimore, Md.	1866
Hartshorne, Edward	Philadelphia, Pa.	1853
Hartshorne, Henry	Philadelphia, Pa.	1855
Harvey, Jas.	Romeo, Mich.	1874
Harwood, E. C.	New York, N. Y.	1872
Hasbrouck, Charles	Hackensack, N. J.	1866
†Haskins, E. B. [d. 1868]	Nashville, Tenn.	1850
Hatch, Fred. W.	Sacramento, Cal.	1871

†Hatch, Johnson C.	Kent, Conn.	1847
Hatfield, Nathan L.	Philadelphia, Pa.	1848
Haven, Jonathan	Newton, N. J.	1865
†Hawley, Joel Edwin [d. 1859]	Ithaca, N. Y.	1849
†Haxall, Robt. Wm. [d. 1872]	Richmond, Va.	1847
Hay, Thomas	Philadelphia, Pa.	1866
Hayden, C. N.	Indianapolis, Ind.	1874
Haynie, S. G	Austin, Texas	1875
Hays, Jacob	Bridgeport, Ill.	1875
†Hayward, Geo., V. P. [d. 1863]	Boston, Mass.	1849
Hazard, Wm. B.	St. Louis, Mo.	1873
†Hazell, Andrew	All Saints, S. C.	1851
Hazen, E. H.	Davenport, Iowa	1872
Hazlett, Robert W.	Wheeling, W. Va.	1870
Hazlewood, Arthur	Grand Rapids, Mich.	1874
Heard, Thos. Jefferson, V. P.	Galveston, Texas	1867
Heaton, A. S.	Detroit, Mich.	1874
Heighway, Archibald E.	Cincinnati, Ohio	1858
†Heintze, F. E. B., V. P. [d. '65]	Baltimore, Md.	1848
†Heister, J. P.	Reading, Pa.	1852
†Hellen, B. Johnson [d. 1864]	Washington, D. C.	1855
Helmick, Joseph	Harrisburg, Ohio	1859
Helm, John H.	Peru, Ind.	1871
Helsby, Thos. H.	Williamsport, Pa.	1866
†Henderson, A. A., U. S. A. [d. 1875]	Charleston, Mass.	1870
†Henderson, Eugene [d. 1867]	Murfreesboro', Tenn.	1858
Henderson, Jas. P.	Newville, Ohio	1856
Henderson, Wm. Warton	Covington, Ky.	1869
†Hendry, Chas. D. [d. 1869]	Camden Co., N. J.	1849
Henry, Morris H.	New York, N. Y.	1870
Hensly, John W.	Yates City, Ill.	1870
Herman, A. J.	Carlisle, Pa.	1874
Herrick, O. E.	Greenville, Mich.	1874
†Herrick, Josiah B. [d. 1849]	Vandalia, Ill.	1848
†Herrick, W. B. [d. 1865]	Chicago, Ill.	1854
Herriott, C. L.	Grafton, Ill.	1873
Herron, W. M.	Allegheny, Pa.	1870
Hess, Smith H.	Quincy, Ill.	1873
Hewit, R. C.	Louisville, Ky.	1859
Hewitt, Geo. W.	Franklin Grove, Ill.	1871

Hewson, Addinell	Philadelphia, Pa.	1855
Hewston, George	San Francisco, Cal.	1871
Heysham, C. S.	Newtown Square, Pa.	1873
Hibberd, James Farquhar, V. P.	Richmond, Ind.	1864
Hicks, R. J.	Williamstown, N. C.	1873
†Hiester, Frank M. [d. 1864]	Reading, Pa.	1853
Hildreth, E. A.	Wheeling, West Va.	1850
†Hildreth, Joseph S. [d. 1869]	Chicago, Ill.	1867
Hill, Edwin A.	East Killingly, Conn.	1864
Hillis, D. B.	Keokuk, Iowa	1873
Hills, T. Morton	Willimantic, Conn.	1870
Hinkle, A. G. B.	Philadelphia, Pa.	1872
Hinsey, J. C.	Ottumwa, Iowa	1874
Hitchcock, Homer O.	Kalamazoo, Mich.	1863
Hobart, A. J.	Clinton, Iowa	1874
Hodge, H. Lenox	Philadelphia, Pa.	1870
†Hodge, Hugh L. [d. 1873]	Philadelphia, Pa.	1848
Hodge, J. A.	Henderson, Ky.	1859
Hodgen, John T.	St. Louis, Mo.	1867
Hoeltge, A.	Cincinnati, Ohio	1875
†Hofey, Thomas [d. 1853]	Columbus, Ga.	1853
Hoffman, Daniel B.	San Diego, Cal.	1871
Holland, J. W.	Louisville, Ky.	1872
Holliday, W. S.	Monmouth, Ill.	1875
Hollister, J. H.	Chicago, Ill.	1873
Hollowbush, J. W.	Warsaw, Ill.	1873
Holloway, Jas. Montgomery	Louisville, Ky.	1869
†Holmes, Daniel [d. 1869]	Elmira, N. Y.	1863
†Holston, Sr., J. G. F. [d. 1874]	Washington, D. C.	1872
Holton, Henry D.	Brattleboro, Vt.	1864
†Homans, John [d. 1868]	Boston, Mass.	1849
Hon, Benton, Jr.	Orleans, Ind.	1875
Hood, H. H.	Litchfield, Ill.	1873
Hood, Thos. H.	Springfield, Ky.	1875
†Hook, J. H. [d. 1861]	St. Matthew's, S. C.	1851
†Hooker, Charles [d. 1863]	New Haven, Conn.	1850
†Hooker, Worth'gton [d. 1868]	New Haven, Conn.	1849
Hooper, P. O.	Little Rock, Ark.	1875
†Hopkins, Joel [d. 1868]	Howard Co., Md.	1847
Hopkins, Thos. S.	Thomasville, Ga.	1875
Horr, Asa	Dubuque, Iowa	1857

Horner, Jr., Fred.	Salem, Va.	1870
†Horner, Wm. E. [d. 1853]	Philadelphia, Pa.	1849
Horton, George F.	Terrytown, Pa.	1858
†Hosmer, Hiram	Watertown, Mass.	1849
Hough, Geo. L.	New Bedford, Mass.	1874
Hough, J. B.	Dayton, Ohio	1873
Howard, E. Lloyd	Baltimore, Md.	1870
Howard, E. W.	Akron, Ohio	1870
Howard, Flodoardo	Washington, D. C.	1847
Howard, R. J.	Pryersburg, Ky.	1875
†Howard, Richard L., V. P.	Columbus, Ohio	1848
Howard, Wm. T.	Baltimore, Md.	1870
†Howe, Zadoc	Billerica, Mass.	1849
Howell, M. V. B.	Moulton, Iowa	1874
Hoyt, Jas. M.	Walled Lake, Mich.	1875
Hubbard, George H.	Troy, N. Y.	1858
Hudson, Salmon	Medina, Ohio	1874
Hughes, Edward Wm.	Granada, Miss.	1869
Hughes, J. B.	Newberne, N. C.	1873
Hughes, J. C.	Keokuk, Iowa	1853
Hughes, J. W.	Blairsville, Pa.	1874
†Humes, Samuel [d. 1853]	Lancaster, Pa.	1848
Humphrey, Wesley	Mexico, Mo.	1873
Humphreys, Lewis	South Bend, Ind.	1874
Hun, Edward R.	Albany, N. Y.	1870
Hun, Thomas	Albany, N. Y.	1853
†Hunkins, Seth C.	Windham, Maine	1860
†Hunt, Ebenezer [d. 1874]	Danversport, Mass.	1849
Hunt, Ebenezer K.	Hartford, Conn.	1860
Hunt, G. F.	North Bend, Wis.	1873
†Huntington, Elisha	Lowell, Mass.	1847
Huntsman, H. C.	Oskaloosa, Iowa	1873
Hupp, John Cox	Wheeling, W. Va.	1863
Hurd, A.	Findlay, Ohio	1874
Hurlbut, H. N.	Chicago, Ill.	1863
Hurlbut, Vincent L.	Chicago, Ill.	1863
Hurst, D. A.	Oskaloosa, Iowa	1873
Hurt, G.	St. Louis, Mo.	1873
†Hurxthal, Fred. T. [d. 1863]	Massillon, Ohio	1856
†Huse, Stephen	Methuen, Mass.	1855
Huselton, W. S.	Allegheny, Pa.	1872

Husted, Nathaniel C., v. p.	New York, N. Y.	1856
†Huston, Robert M.	Philadelphia, Pa.	1848
†Huxley, A. M. [d. 1864]	Goshen, Conn.	1853
Hyde, Frederick	Cortlandville, N. Y.	1847
Hyde, George S.	Boston, Mass.	1865
Hyatt, E. H.	Delaware, Ohio	1874
Ireland, A. B.	Camanche, Iowa	1874
Isham, Ralph N.	Chicago, Ill.	1859
†Ives, Eli, s., p. [d. 1861]	New Haven, Conn.	1847
Ives, H. M.	Hastings-on-Hudson, N. Y.	1874
†Jackson, James [d. 1867]	Boston, Mass.	1849
Jackson, John Davies	Danville, Ky.	1867
†Jackson, R. M. S. [d. 1865]	Cresson, Pa.	1855
†Jackson, Samuel (Prof.) [d.'72]	Philadelphia, Pa.	1847
†Jackson, Samuel [d. 1869]	Philadelphia, Pa.	1847
Jacobi, Abraham	New York, N. Y.	1860
Jacobs, W. C.	Akron, Ohio	1875
James, H. H.	Rahway, N. J.	1874
Jameson, Henry	Indianapolis, Ind.	1875
†Jameson, Sen. Horatio G.	Baltimore, Md.	1848
Janes, Henry	Waterbury, Vt.	1871
†Janney, Benj. Say [d. 1859]	Philadelphia, Pa.	1847
Jarvis, Geo. C.	Hartford, Conn.	1872
†Jarvis, N. S.	U. S. Army	1853
Jaudon, Benj. A.	Palmyra, Ill.	1873
Jenkins, G. F.	Keokuk, Iowa.	1873
Jenkins, J. Foster	Yonkers, N. Y.	1853
†Jenkins, Solomon M. [d. '49]	Easton, Md.	1847
Jenks, Daniel S.	Plano, Ill.	1874
Jenks, Edward Watrous	Detroit, Mich.	1863
Jenks, Jas. E.	East Avon, N. Y.	1874
Jennings, Roscoe Greene	Little Rock, Ark.	1869
†Jennings, Selden	Richmond, Mass.	1848
Jennings, T. C.	East St. Louis, Ill.	1873
Jerome, J. H.	Saginaw, Mich.	1875
†Jewell, Wilson, v. p. [d. 1868]	Philadelphia, Pa.	1847
†Jewett, Adams [d. 1875]	Dayton, Ohio	1874
Jewett, Harvey	Canandaigua, N. Y.	1848
Johnson, B. P.	Alliance, Ohio	1872

†Johnson, Carter P.	Richmond, Va.	1847
†Johnson, Charles	York, Ill.	1859
Johnson, G. K.	Grand Rapids, Mich.	1873
Johnson, H. A.	Chicago, Ill.	1873
Johnson, John B., V. P.	St. Louis, Mo.	1847
Johnson, J. G.	Detroit, Mich.	1874
Johnson, J. Perrine	Peoria, Ill.	1875
Johnson, S. P.	Waterloo, N. Y.	1874
Johnston, Christopher	Baltimore, Md.	1855
Johnston, D.	Westport, Ky.	1875
Johnston, W.	St. Louis, Mo.	1873
Johnston, Wirt	Jackson, Miss.	1875
Johnston, W. W.	Washington, D. C.	1870
Jones, B. B.	Monticello, Ill.	1873
†Jones, Daniel T. [d. 1861]	Baldwinsville, N. Y.	1852
Jones, G. W.	Danville, Ill.	1873
Jones, H. G.	Evansville, Ind.	1875
Jones, Philo E.	Wauseon, Ohio	1873
†Jones, Wm. [d. 1867]	Washington, D. C.	1858
Jones, W. W.	Toledo, Ohio	1856
Joynes, Levin S.	Richmond, Va.	1847
Judd, Homer	St. Louis, Mo.	1869
†Judkins, William	Cincinnati, Ohio	1848
Juler, H. Cundell	Cincinnati, Ohio	1873
†Kammerer, Jos. [d. 1875]	New York, N. Y.	1870
†Kane, Edward [d. 1875]	Detroit, Mich.	1871
Kedzie, Robert C.	Lansing, Mich.	1872
Keller, D.	Paris, Ky.	1875
Keller, James M., V. P.	Louisville, Ky.	1859
Kelley, Clinton W.	Louisville, Ky.	1875
Kelsey, W. J.	Cassopolis, Mich.	1874
Kemp, J. D.	Dayton, Ohio.	1867
Kendall, H. W.	Quincy, Ill.	1872
Kendall, J. E.	Wirt, W. Va.	1872
†Kendall, Pierson T.	Clinton, Mass.	1859
Kennard, Thos.	St. Louis, Mo.	1873
Kennedy, H. K.	Topeka, Kansas	1873
Kenney, M. C.	Lapier, Mich.	1874
Kent, J. B.	Putnam, Conn.	1874
Kenyon, Job.	Providence, R. I.	1860

†Kerfoot, George B.	Lancaster, Pa.	1847
Kerlin, Isaac N.	Media, Pa.	1865
Keyser, P. D.	Philadelphia, Pa.	1870
Keyt, A. T.	Cincinnati, Ohio	1874
Kilgore, J. C.	Little York, Ill.	1873
Kimberlin, H. L.	Mitchell, Ind.	1875
Kinchloe, D. A.	Sardis, Miss.	1875
King, Cyrus B.	Allegheny, Pa.	1875
King, James	Pittsburg, Pa.	1866
King, James Stebbins	Decatur, Ill.	1863
Kinlock, R. A.	Charleston, S. C.	1853
Kinne, A. F.	Ypsilanti, Mich.	1874
Kirkpatrick, W. D.	Fredonia, Ky.	1875
Kirkscey, E. J.	Columbus, Ga.	1875
Kitchen, John M.	Indianapolis, Ind.	1874
Kitchell, N. A.	Henderson, Ky.	1875
Kittrell, Benj. F.	Blackhawk, Miss.	1875
†Kissam, R. S.	New York, N. Y.	1847
†Klapp, Wm. Henry [d. 1855]	Philadelphia, Pa.	1849
Klein, Peter	Detroit, Mich.	1856
Knapp, James	Louisville, Ky.	1875
Knight, C. F.	St. Joseph, Mo.	1873
†Knight, E. A. [d. 1872]	Springfield, Vt.	1864
Knight, Henry M.	Lakeville, Conn.	1864
†Knight, Jonathan, V. P., P. [d. 1864]	New Haven, Conn.	1847
Knox, S. B. P.	Brownsville, Pa.	1872
Knox, Wm. F.	McKeesport, Pa.	1870
†Knox, Wm. Morrow	Baumstown, Pa.	1860
†Koehne, H. F.	Dayton, Ohio	1857
Kohl, Julius	Belleville, Ill.	1873
†Krackowizer, Ernest [d. 1875]	New York, N. Y.	1855
Krout, A. N.	Van Wert, Ohio	1874
Kueckelhan, A.	St. Louis, Mo.	1873
Kuepper, E. W.	Ligonier, Ind.	1874
Kuhn, L. De Barth	Reading, Pa.	1872
Kumpe, G. E.	Leighton, Ala.	1875
La Count, D.	Chilton, Wis.	1873
Ladd, Horace	Scranton, Pa.	1872
†Lajus, D. Paul	Philadelphia, Pa.	1851

†Lamb, John F. [d. 1869]	Frankford, Pa.	1851
Lambert, John	Salem, N. Y.	1874
Landon, H. B.	Bay City, Mich.	1874
Landon, Wm. M.	Burton, Ill.	1873
Lane, Levi Cooper	San Francisco, Cal.	1871
†Lang, Edmund	Philadelphia, Pa.	1851
Langan, D.	De Witt, Iowa	1872
Langdon, Oliver M.	Cincinnati, Ohio	1850
Langfitt, W. J.	Allegheny, Pa.	1870
Langlois, T. J.	Wyandotte, Mich.	1874
Langworthy, Owen Palmer	Clinton, La.	1869
Lankford, A. P.	St. Louis, Mo.	1870
Larendon, J.	Houston, Texas	1875
Larimore, F. C.	Mt. Vernon, Ohio	1872
†La Roche, Rene [d. 1872]	Philadelphia, Pa.	1847
Larrabee, J. A.	Louisville, Ky.	1875
Lathrop, Chas. H.	Lyons, Iowa	1873
Latimer, Thos. S.	Baltimore, Md.	1870
Laughlin, E. D.	Orleans, Ind.	1875
Lawrence, Geo. W.	Hot Springs, Ark.	1855
Lawrence, Jonathan S.	New York, N. Y.	1853
†Lawrence, L. M.	Cincinnati, Ohio	1850
Lay, J. Cochran	Dubuque, Iowa	1872
Lazzell, James M.	Fairmont, W. Va.	1868
Leaman, Brainard	Leaman Place, Pa.	1872
Leaman, Henry	Philadelphia, Pa.	1872
†Leavenworth, Melinus C.	Waterbury, Conn.	1860
Lebby, Robert	Charleston, S. C.	1849
†Le Boutillier, Charles W.	St. Anthony, Minn.	1856
Lee, Benjamin	Philadelphia, Pa.	1868
†Lee, Charles Alfred [d. 1872]	Peekskill, N. Y.	1847
†Lee, James [d. 1866]	Mechanicsville, N. Y.	1864
Lee, William, L.	Washington, D. C.	1866
Leech, Thomas F.	Attica, Ind.	1875
Leete, Albert E.	Romeo, Mich.	1874
Leete, J. M.	St. Louis, Mo.	1873
†Leib, Henry F. [d. 1856]	Philadelphia, Pa.	1848
†Leland, Aaron L. [d. 1858]	Detroit, Mich.	1853
Lemoine, E. S., s.	St. Louis, Mo.	1853
Lenoir, B. B.	Lenoir, Tenn.	1849
Lenow, Jas. H.	Little Rock, Ark.	1875

Leonard, B. B.	West Liberty, Ohio	1855
†Leonard, S. E.	New Albany, Ind.	1850
Lester, T. B.	Kansas City, Mo.	1872
Letcher, Jas. Hughes	Henderson, Ky.	1875
†Letcher, Robert P. [d. 1867]	Henderson, Ky.	1859
Levick, James J.	Philadelphia, Pa.	1864
†Lewis, Fred. W. [d. 1872]	Philadelphia, Pa.	1868
Lewis, R. H.	Savannah, Ga.	1875
†Lewis, R. S. [d. 1870]	Dubuque, Iowa	1856
Lichty, Daniel	Rochelle, Ill.	1873
Lieberman, Charles H.	Washington, D. C.	1858
Lilly, Samuel	Lambertville, N. J.	1866
†Lincoln, Isaac [d. 1868]	Brunswick, Me.	1849
Linde, Christian	Oshkosh, Wis.	1872
Linde, F. H.	Oshkosh, Wis.	1873
Lindsley, John Berrien	Nashville, Tenn.	1851
Lindsly, Harvey, P.	Washington, D. C.	1847
Lineaweaver, J. K.	Columbia, Pa.	1872
Linley, Jas. M.	Atchison, Kansas	1873
Linn, G. A.	Monongahela City, Pa.	1874
Linn, W. S.	Bowensburg, Ill.	1874
Linthicum, D. A.	Helena, Ark.	1873
Linthicum, E.	Evansville, Ind.	1875
Linville, D. G.	Columbia City, Ind.	1874
Lipscomb, Thos.	Shelbyville, Tenn.	1875
†Little, William B. [d. 1867]	San Francisco, Cal.	1860
Littlefield, H. H.	Beardstown, Ill.	1875
Litton, A.	St. Louis, Mo.	1873
Livingston, J. B.	West Middlesex, Pa.	1874
Logan, Joseph P., V. P.	Atlanta, Ga.	1863
Logan, P. W.	Stanford, Ky.	1873
Logan, R. F.	Shelbyville, Ky.	1875
Logan, Thomas M., V. P., P.	Sacramento, Cal.	1865
Lomax, William	Marion, Ind.	1850
Long, J. W.	Bryon, Ohio	1874
†Long, Samuel [d. 1863]	Springfield, Ill.	1854
Long, W. H.	Louisville, Ky.	1875
Loomis, Harvey	Burr Oak, Mich.	1875
Love, Wm. Abram	Atlanta, Ga.	1875
Lovejoy, J. W. H., S.	Washington, D. C.	1864
Lovelace, L. M.	Milburn, Ky.	1873

Lowman, John	Johnstown, Pa.	1853
Lowder, J. T.	Harrodsburg, Ind.	1875
Lowry, Jas.	Shelbyville, Ky.	1875
Lucas, G. L.	Peoria, Ill.	1873
Lucas, J. R.	Canton, Mo.	1873
†Luden, J. B.	Huntingdon, Pa.	1856
Ludlum, Wm. S.	New York, N. Y.	1865
Ludwig, C. V. F.	St. Louis, Mo.	1873
Lusk, Wm. T.	New York, N. Y.	1872
Luten, J. R.	Wesley, Ky.	1873
Lyford, W. H.	Port Byron, Ill.	1873
†Lyman, Norman [d. 1851]	Warren, Conn.	1849
Lyman, O. N.	Wadsworth, Ohio	1874
†Lyon, G. Gallatin	Jerseyville, Ill.	1867
Lyon, Thomas	Williamsport, Pa.	1872
Lyster, H. F.	Detroit, Mich.	1874
McAlester, A. W.	Columbia, Mo.	1873
†McAllister, Asa	Ellsworth, Me.	1856
McCabe, D. W.	Wyandotte, Kansas	1873
†McCall, John [d. 1867]	Utica, N. Y.	1847
McCann, James	Pittsburg, Pa.	1870
McCarthy, J. F.	Valparaiso, Ind.	1873
†McClellan, J. H. B. [d. 1874]	Philadelphia, Pa.	1849
McClelland, M. A.	Knoxville, Ill.	1873
McClelland, W. F.	Denver, Col.	1872
†McCloskey, Lawrence Aurelius	Mobile, Ala.	1869
McClure, A. W.	Mt. Pleasant, Iowa	1873
McColl, Hugh	Lapeer, Mich.	1874
McConnell, John D.	Brownsville, Miss.	1875
McCoy, P. Y.	Columbus, Ky.	1873
McDaniel, Edward Davis	Camden, Ala.	1869
McDonald, Nesbit	Pittsburg, Pa.	1868
McDonald, W. B.	Indianapolis, Ind.	1875
McDowell, J. J.	St. Louis, Mo.	1867
†McDowell, J. N., V. P. [d. '68]	St. Louis, Mo.	1854
McDowell, W. J.	Portsmouth, Ohio	1867
McEbright, Thomas	Akron, Ohio	1867
†McElhenny, S. W.	Wheeling, W. Va.	1847
†McEwen, John B. [d. 1867]	New York, N.Y.	1860

McFarland, S. F.	Oxford, N. Y.	1872
McGaughey, J. B.	Winona, Minn.	1872
McGill, J. D.	Jersey City, N. J.	1872
†McGill, Geo. M.	Baltimore, Md.	1866
McGowan, H.	Harrisburg, Pa.	1875
McGraw, Theodore A.	Detroit, Mich.	1874
McGregor, Gregor Carmichael	Wesley, Texas	1869
†McGregor, John [d. 1868]	Thompson, Conn.	1864
†McGugin, D. L.	Keokuk, Iowa	1854
McGuire, Hunter	Richmond, Va.	1872
McIlvaine, Robert R.	New York, N. Y.	1850
†McIntyre, Alexander	Palmyra, N. Y.	1852
McIntyre, J. H.	Richmond, Ind.	1873
McKinley, Hays	Kenosha, Wis.	1856
McKown, J. M.	Arcola, Ill.	1875
McLaughlin, A. C.	Tremont, Ohio	1872
McLaughlin, J. W.	Austin, Texas	1874
McLean, Leroy	Troy, N. Y.	1870
McLeod, S. B. W.	New York, N. Y.	1872
McMahan, W. R.	Huntingburg, Ind.	1875
McMann, W. W.	Gardner, Ill.	1874
†McMeens, R. R. [d. 1864]	Sandusky, Ohio	1856
McMurtry, L. S.	Danville, Ky.	1875
McNabb, Theo.	Fremont, Ind.	1874
McNary, Hugh F.	Princeton, Ky.	1875
†McNaughton, James [d. 1874]	Albany, N. Y.	1847
†McNevin, Wm. H.	New York, N. Y.	1853
†McPhail, Leonard C. [d. '67]	Brooklyn, N. Y.	1853
McPheeters, W. Marcellus, V.P.	St. Louis, Mo.	1850
McQuesten, E. F.	Nashua, N. H.	1873
McReynolds, W. T.	Clarksville, Tenn.	1872
McVey, Richard E.	Waverly, Ill.	1864
Mabon, T.	Allegheny, Pa.	1873
Maccoun, R. T.	U. S. Navy	1873
Maclean, Donald	Ann Arbor, Mich.	1875
Macready, James	Monroe, Ohio	1875
Magill, W. H.	Danville, Pa.	1872
Magoffin, John	St. Louis, Mo.	1854
Magruder, David L.	St. Louis, Mo.	1873
†Manlove, Joseph Edward [d. 1870]	Nashville, Tenn.	1857

†Manly, James R. [d. 1851]	New York, N. Y.	1847
Mann, Chas.	Nicholasville, Ky.	1873
†March, Alden, P. [d. 1869]	Albany, N. Y.	1847
†March, M. M. [d. 1868]	Manlius, N. Y.	1859
Marsh, Elias J.	Patterson, N. J.	1872
Martin, G. R.	North Creek, N. Y.	1875
†Martin, Joshua	Xenia, Ohio	1850
Martin, W. Upton	Lexington, Ky.	1873
Mason, Lewis D.	Brooklyn, N. Y.	1870
†Massie, Hardin	Charlottesville, Va.	1847
Matchett, J. F.	Waco, Texas	1869
†Mathews, Charles H.	Doylestown, Pa.	1849
Matthews, W. S.	Youngstown, Ohio	1874
Maughs, G. M. B.	St. Louis, Mo.	1873
Maupin, W. L.	Columbia, Mo.	1873
Maury, Francis F.	Philadelphia, Pa.	1872
Maury, Thos. F. [d. 1871]	Washington, D. C.	1866
Mauzy, R. D.	Rushville, Ind.	1873
Mavity, W. K.	Kokomo, Ind.	1874
Maxwell, A. S.	Davenport, Ind.	1873
Maxwell, D. A.	Paducah, Ky.	1875
Maxwell, P. J.	Columbus, Miss.	1875
†Mayburry, William [d. 1873]	Philadelphia, Pa.	1847
Mayer, J. H.	Willowstreet, Pa.	1873
Meachem, John G.	Racine, Wis.	1874
Mears, George W.	Indianapolis, Ind.	1850
Mears, J. Ewing	Philadelphia, Pa.	1870
Mehard, S. S.	Mercer, Pa.	1872
†Meigs, Charles D. [d. 1869]	Philadelphia, Pa.	1847
†Meisel, Henry [d. 1872]	Elmira, N. Y.	1870
†Mendenhall, George, V. P., P. [d. 1874]	Cincinnati, Ohio	1850
Mendenhall, Nathan	Thornton, Ind.	1875
Messenger, John	New York, N. Y.	1868
†Metcalf, S. W. [d. 1874]	Owego, N. Y.	1872
Meyer, Theo.	Belleville, Ill.	1873
Michel, Richard Fraser, V. P.	Montgomery, Ala.	1858
†Middlebrook, Elijah	Trumbull, Conn.	1847
Middlecamp, H. H.	Warrenton, Mo.	1873
Miller, A. J.	Paris, Ill.	1872
Miller, C. B.	Lawrenceburg, Ind.	1875

Miller, D. P.	Huntingdon, Pa.	1872
†Miller, Henry, P. [d. 1874]	Louisville, Ky.	1850
Miller, J.	Andover, N. J.	1874
†Miller, John [d. 1862]	New York, N. Y.	1853
†Miller, Robinson [d. 1871]	Mobile, Ala.	1853
Miller, Samuel T.	Paulsboro', N. J.	1873
†Miller, W. H.	Henderson, Ky.	1859
Mills, Charles S.	Richmond, Va.	1852
Mills, H. R.	Port Huron, Mich.	1874
Mills, S. J.	Toledo, Ohio	1874
Miner, Julius F.	Buffalo, N. Y.	1864
†Miner, William [d. 1865]	New York, N. Y.	1864
Minor, Hubbard Taylor	Fredericksburg, Va.	1873
Minor, T. Curtis	Cincinnati, Ohio	1872
†Mitchell, Edward	Edisto, S. C.	1851
Mitchell, Geo.	Mansfield, Ohio	1873
Mitchell, Henry	Jersey City, N. J.	1872
†Mitchell, Henry [d. 1856]	Norwich, N. Y.	1849
Mitchell, J. D.	Terre Haute, Ind.	1875
†Mitchell, John Kearsly [d. '58]	Philadelphia, Pa.	1847
†Mitchell, James R.	Milford, Del.	1855
Mitchell, L. C.	Brooklyn, N. Y.	1860
Mitchell, R. J.	Girard, Ill.	1873
†Mitchell, Thomas D. [d. '64]	Philadelphia, Pa.	1847
Moe, L. W.	Ottawa, Ohio	1874
Monell, Joseph A.	New York, N. Y.	1855
†Monkur, John C. S. [d. 1867]	Baltimore, Md.	1848
Monroe, Alex. LeB.	Medway, Mass.	1875
Monroe, G. J.	Leland, Ill.	1873
Montgomery, Edw.	St. Louis, Mo.	1872
Montgomery, Jos. F.	Sacramento, Cal.	1871
Moon, O. W.	Braceville, Ill.	1874
Moore, Edward B.	Boston, Mass.	1855
Moore, Edw. M.	Rochester, N. Y.	1849
Moore, Ely Herdman	Wellsburg, W. Va.	1871
Moore, John, U. S. A.	New York, N. Y.	1874
Moore, Jonas Patrick	Yazoo, Miss.	1869
Moore, John S., V. P.	St. Louis, Mo.	1852
†Moore, John Wilson [d. 1865]	Philadelphia, Pa.	1847
Moore, W. J.	Norfolk, Va.	1852
†Morgan, Gerard E., S. [d. 1874]	Baltimore, Md.	1858

Morgan, Jas. E.	Washington, D. C.	1873
†Moriarty, John M. [d. 1872]	Boston, Mass.	1849
Morland, William W.	Boston, Mass.	1849
Morris, John	Baltimore, Md.	1868
Morris, Moreau	New York, N. Y.	1864
†Morris, Philip V. N.	Buskirk's Bridge, N Y.	1856
†Morris, William W.	Dover, Del.	1847
Morrison, J. M.	Hearne, Texas	1874
Morrison, Jas.	Quincy, Mass.	1875
Morrison, M. P.	Washington, Pa.	1875
Morrison, Thos.	Wayne, Mich.	1874
Morse, J. M.	Galesburg, Ill.	1873
Mortland, J. C.	Edgarton, Ohio	1874
Morton, Lloyd	Pawtucket, R. I.	1873
†Morton, Sam'l Geo. [d. 1851]	Philadelphia, Pa.	1847
Moses, Gratz A.	Mobile, Ala.	1873
Moses, S. Gratz	St. Louis, Mo.	1854
Mosher, Jacob S.	Tompkinsville, N. Y.	1872
†Moss, Benjamin Hart [d.1873]	New Orleans, La.	1869
Mosser, M. B.	Shiremanstown, Pa.	1873
Mossman, B. E.	Greenville, Pa.	1874
†Mothershead, I. L.	Indianapolis, Ind.	1850
Mott, Alex. B.	New York, N. Y.	1864
†Mott, Valentine [d. 1865]	New York, N. Y.	1847
Mottram, C. V.	Lawrence, Kansas	1873
†Moulton, Peter [d. 1873]	New Rochelle, N. Y.	1853
†Mount, W. [d. 1865]	Cincinnati, Ohio	1859
†Mowe, Daniel	Lowell, Mass.	1849
Mowry, Robert B.	Allegheny City, Pa.	1850
Mudd, H. H.	St. Louis, Mo.	1873
Mulheran, J. J.	Detroit, Mich.	1874
Mulhern, Jas.	Greenville, Mich.	1874
Mullen, Alexander J.	St. Louis, Mo.	1850
†Muller, John R. [d. 1868]	Baltimore, Md.	1866
Mulligan, F. H.	Wabashaw, Minn.	1873
Mumford, S. E.	Princeton, Ind.	1875
†Munn, Jephtha B. [d. 1863]	Chatham, N. J.	1849
Murdock, James B.	Pittsburg, Pa.	1875
Murfree, J. B.	Murfreesboro', Tenn.	1873
Murphy, Edw.	New Harmony, Ind.	1873
Murphy, John A.	Cincinnati, Ohio	1863

Murray, L. S.	Medina, Ohio	1874
Muscroft, C. S.	Cincinnati, Ohio	1867
†Mussey, Reuben D., P. [d. 1865]	Cincinnati, Ohio	1849
Mussey, Wm. Heberden, V. P.	Cincinnati, Ohio	1858
†Mütter, Thos. Dent [d. 1859]	Philadelphia, Pa.	1847
Myers, Wm. H.	Fort Wayne, Ind.	1865
Nagle, Hiester M.	Reading, Pa.	1868
Nance, Hiram	Kewanee, Ill.	1854
Nash, Alfred	Lapeer, Mich.	1872
†Naudain, Arnold	Philadelphia, Pa.	1847
Neal, Thomas L.	Dayton, Ohio	1867
Nebinger, Andrew	Philadelphia, Pa.	1858
Neftel, Wm. B.	New York, N. Y.	1870
Neilson, John L. (U. S. N.)	Philadelphia, Pa.	1875
Nelson, Alfred B.	Danville, Ky.	1875
Nelson, W. H.	Taberg, N. Y.	1872
†Newell, Selim [d. 1871]	St. Johnsbury, Vt.	1849
Newland, Ben.	Bedford, Ind.	1874
Newland, J. W.	Bedford, Ind.	1875
†Newman, James M.	Buffalo, N. Y.	1855
Newman, Robert	New York, N. Y.	1872
Newman, S. T.	St. Louis, Mo.	1873
Newton, D. N.	Towanda, Pa.	1872
Nichell, H.	Buffalo, N. Y.	1863
Nichols, C. H.	Washington, D. C.	1858
†Nichols, Whitfield	Newark, N. J.	1849
Niedermeyer, H.	Cincinnati, Ohio	1875
Nims, Dwight	Jackson, Mich.	1856
Norris, James Thomas	Brenham, Texas	1869
North, Alfred	Waterbury, Conn.	1866
North, John D.	Jackson, Mich.	1874
†Norton, J. C.	Marion, Ohio	1850
Norton, O. D.	Cincinnati, Ohio	1855
†Nott, G. A. [d. 1867]	New Orleans, La.	1852
Nottingham, C. B.	Macon, Ga.	1852
Noyes, A. A.	Mason City, Iowa	1874
Noyes, Henry D.	New York, N. Y.	1864
Noyes, J. F.	Detroit, Mich.	1873
Nye, Elisha B.	Middleton, Conn.	1874

Oakley, F. M.	York, Mich.	1874
Oakley, J. J.	Detroit, Mich.	1874
O'Brien, E. C. W.	Buffalo, N. Y.	1874
Octerloney, John A.	Louisville, Ky.	1873
Odell, S. F.	Akron, Ohio	1875
†Odin, Jr., John	Boston, Mass.	1849
†O'Donnel, D. A. [d. 1874]	Baltimore, Md.	1853
†Ogden, Benjamin [d. 1867]	New York, N. Y.	1848
†Ogier, Septimus A. [d. 1851]	Frazer, Pa.	1853
O'Hagan, C. J.	Greenville, N. C.	1872
Ohr, C. H.	Cumberland, Md.	1868
O'Leary, R.	Vicksburg, Miss.	1873
†Oliver, Abner McCarty [d. 1869]	Montgomery, Ala.	1869
O'Nan, Dennis	Christiansburg, Ky.	1875
O'Neal, J. W. C.	Gettysburg, Pa.	1875
O'Reilly, P. S.	St. Louis, Mo.	1873
Osgood, Jonathan W. D.	Greenfield, Mass.	1853
Outten, W. B.	Carondelet, Mo.	1873
†Owen, W. O. [d. 1875]	Lynchburg, Va.	1868
Owen, W. Talbot	Louisville, Ky.	1875
Owens, J. A.	Monticello, Ark.	1873
Packard, Nelson J.	Sturgis, Mich.	1874
†Padelford, George P. [d. 1861]	Savannah, Ga.	1857
†Page, Calvin G. [d. 1869]	Boston, Mass.	1860
Page, Horatio N.	Chelsea, Mass.	1874
Painter, Fred.	Chattanooga, Tenn.	1875
Pallen, Montrose A., s.	New York, N. Y.	1858
Palmer, E. R.	Louisville, Ky.	1873
†Palmer, George G. [d. 1868]	Stonington, Conn.	1864
Palmer, Gideon S.	Washington, D. C.	1854
Pancoast, Joseph	Philadelphia, Pa.	1848
Paoli, Gerhardt C.	Chicago, Ill.	1863
Pardee, M. B.	So. Norwalk, Conn.	1872
Parish, W. H.	Philadelphia, Pa.	1872
Park, W. H.	Tyler, Texas	1875
†Parker, Samuel [d. 1870]	Lancaster, Pa.	1854
†Parkman, George	Boston, Mass.	1849
†Parkman, Samuel	Boston, Mass.	1847

Parramore, Edw. L.	Woodland, Cal.	1871
†Parrish, Isaac [d. 1852]	Philadelphia, Pa.	1847
Parrish, Joseph	Baltimore, Md.	1847
Parsons, C. W.	Louisville, Ky.	1875
Parsons, Israel	Marcellus, N. Y.	1874
Parsons, John W.	Portsmouth, N. H.	1870
Paschall, N. J.	Fulton, Ky.	1875
Parvin, Theophilus	Indianapolis, Ind.	1867
Patch, Franklin Fletcher	Boston, Mass.	1865
Patterson, A. W.	Indianapolis, Ind.	1875
†Patterson, Geo. W. [d. 1852]	Philadelphia, Pa.	1848
†Patterson, Henry S. [d. 1854]	Philadelphia, Pa.	1847
†Pattison, Granville S.	New York, N. Y.	1847
Patton, J. M.	Gentryville, Mo.	1873
Paul, Truman E.	Ottawa, Ohio	1875
Payton, Daniel	Salem, Oregon	1871
Peabody, James H.	Omaha, Neb.	1870
Pearman, J. T.	Champaigne, Ill.	1875
Pearse, S. H.	Mt. Vernon, Ind.	1875
Peaslee, Edmund R.	New York, N. Y.	1849
Peck, S. W.	Washington, Ind.	1875
Peck, W. F.	Davenport, Iowa	1865
†Peebles, J. F. [d. 1858]	Petersburg, Va.	1847
Peirce, Wm. P.	Lemont, Ill.	1874
†Peirson, A. L.	Salem, Mass.	1847
Pendleton, John E.	Hartford, Ky.	1875
Pennington, Joel	Milton, Ind.	1850
†Pennypacker, Isaac A.	Philadelphia, Pa.	1855
Penrose, Thos. N. (U. S. N.)	Philadelphia, Pa.	1875
Pepper, Wm.	Philadelphia, Pa.	1872
†Pepper, William [d. 1864]	Philadelphia, Pa.	1847
†Perkins, Chauncey F. [d. 1872]	Erie, Pa.	1867
Perkins, Geo.	Somerset, Ky.	1875
†Perkins, John D. [d. 1860]	Smyrna, Del.	1848
†Perkins, John P.	Great Barrington, Mass.	1856
Perry, J. G.	New York, N. Y.	1872
†Perry, Marshall S.	Boston, Mass.	1849
Peters, John C.	New York, N. Y.	1868
†Peticolas, A. E. [d. 1868]	Richmond, Va.	1852
Pettit, Alonzo	Elizabeth, N. J.	1872
Phillips, E. L.	Galesburg, Ill.	1874

†Pierce, George A. [d. 1862]	Providence, R. I.	1858
†Pierson, William S.	Windsor, Conn.	1849
†Pike, Nathan S.	Sterling Hill, Conn.	1853
Pilcher, Lewis S.	Brooklyn, N. Y.	1874
†Pillsbury, John D.	Lowell, Mass.	1849
Pinckney, Ninian (U.S.N.), v. p.	Easton, Md.	1848
Pineo, Peter	Hyannis, Mass.	1872
Pinkerton, Thos. H.	Oakland, Cal.	1871
†Pitcher, Zina, p. [d. 1872]	Detroit, Mich.	1850
†Pitkin, A. S.	Burlington, Vt.	1849
Pitner, Thos. J.	Jacksonville, Ill.	1872
Pittman, Newson J.	Tarboro, N. C.	1849
Platt, Gideon L.	Waterbury, Conn.	1848
Plummer, S. C.	Rock Island, Ill.	1873
Polk, J. L.	Arcola, Ill.	1873
Pollak, S.	St. Louis, Mo.	1852
Pollard, George Fitz Edward	Montgomery, Ala.	1869
Pollock, Alex. McCandless, v.p.	Pittsburg, Pa.	1850
Pollock, Irving J.	Georgetown, Col.	1873
†Pond, Benjamin	Westborough, Mass.	1849
†Pope, Charles A., v. p., p. [d. 1870]	St. Louis, Mo.	1851
†Porcher, Francis Y. [d. 1862]	Charleston, S. C.	1851
Porter, D. N.	Eminence, Ky.	1875
†Porter, E. M.	Bridgeton, N. J.	1852
Porter, Frank G.	St. Louis, Mo.	1870
†Porter, John B.	U. S. Army	1856
†Porter, Mortimer G. [d. 1863]	New York, N. Y.	1860
Porter, Moses	Kalamazoo, Mich.	1874
†Porter, R. M.	Nashville, Tenn.	1857
Porter, Robert R.	Wilmington, Del.	1847
Post, Alfred C., v. p.	New York, N. Y.	1848
Potter, Fred. Ensign (U. S. N.)	Portsmouth, N. H.	1869
†Potter, J. F. [d. 1868]	Cincinnati, Ohio	1855
Potter, Milton G.	Buffalo, N. Y.	1872
Powell, Edwin	Chicago, Ill.	1873
†Power, William	Baltimore, Md.	1847
Poynter, M. E.	Medway, Ky.	1875
†Pratt, Calvin B.	Bridgewater, Mass.	1860
Pratt, Foster	Kalamazoo, Mich.	1874
Prewitt, T. F.	St. Louis, Mo.	1873

Price, A. D.	Harrodsburg, Ky.	1875
Priestley, Joseph	Northumberland, Pa.	1872
Prince, David, V. P.	Jacksonville, Ill.	1854
Pritchett, J. W.	Madisonville, Ky.	1875
Prout, J. S.	Brooklyn, N. Y.	1872
Pugh, John W.	Oaktown, Ind.	1875
Pugh, W. A.	Rushville, Ind.	1875
Pundy, Chas. H.	Derby, Conn.	1875
†Purdy, Jotham [d. 1858]	Elmira, N. Y.	1853
Purviance, S. W.	Crawfordsville, Ind.	1875
Quimby, Isaac N.	Jersey City, N. J.	1872
Quinn, J. J.	Cincinnati, Ohio	1875
Radcliff, Samuel J.	Washington, D. C.	1868
Ragan, Gillum T.	Neoga, Ill.	1873
Ramsey, J. W.	Clarksburg, W. Va.	1867
Rand, B. Howard	Philadelphia, Pa.	1868
†Randolph, Jacob	Philadelphia, Pa.	1847
Ranney, G. E.	Lansing, Mich.	1874
†Ranney, W. R.	Townshend, Vt.	1848
Raridan, Samuel A.	Bedford, Ind.	1875
Rathbone, Joshua H.	Jamestown, N. Y.	1871
Rauch, John H.	Chicago, Ill.	1875
Rawlings, Jas. W.	New Harmony, Ind.	1873
Rawson, C. H.	Des Moines, Iowa	1873
†Ray, J. T. [d. 1874]	Meadville, Pa.	1868
†Ray, L. G. [d. 1864]	Paris, Ky.	1850
Rea, John	New Castle, Ind.	1870
Read, A. N.	Norwalk, Ohio	1855
Read, Ezra	Terre Haute, Ind.	1874
Read, M. S.	Chandlersville, Ill.	1873
†Ream, John [d. 1869]	Hempfield, Pa.	1854
Reamy, Thaddeus A.	Cincinnati, Ohio	1867
Reece, Madison	Abingdon, Ill.	1874
Reed, A. G.	Philadelphia, Pa.	1872
†Reese, D. Meredith, V. P.	New York, N. Y.	1847
Reeve, John C.	Dayton, Ohio	1866
†Reid, Wm. W.	Rochester, N. Y.	1860
†Remington, Isaac [d. 1862]	Philadelphia, Pa.	1847
Renninger, A. C.	Harrisburg, Pa.	1875

Rennolds, H. T.	Baltimore, Md.	1875
Reiter, W. C.	Pittsburg, Pa.	1870
Reyburn, Robert	Washington, D. C.	1868
Reynolds, Dudley S.	Louisville, Ky.	1872
Reynolds, Jesse	Pottstown, N. Y.	1875
Rhoads, Geo. W.	Shelbyville, Ill.	1873
†Richards, C. Orrick	Lancaster, Pa.	1853
†Richards, John [d. 1862]	Washington, D. C.	1858
†Richardson, Braton [d. 1864]	Montrose, Pa.	1863
Richardson, Edward	Louisville, Ky.	1874
Richardson, Joseph G.	Philadelphia, Pa.	1867
†Richardson, S. B.	Louisville, Ky.	1858
Richardson, Tobias Gibson	New Orleans, La.	1855
Richardson, Wm. L.	Montrose, Pa.	1863
Richings, C. H.	Rockford, Ill.	1872
Rickards, W. M. L.	Philadelphia, Pa.	1874
Riddell, S. S.	Norwich, N. Y.	1874
Ridenour, W. T.	Toledo, Ohio	1874
Riess, Chas.	St. Louis, Mo.	1873
Righter, Wash.	Columbia, Pa.	1872
†Riley, A. A.	Fulton, Mo.	1854
†Rivers, Henry Wheaton [d. 1868]	Providence, R. I.	1852
†Rives, L. C. [d. 1870]	Cincinnati, Ohio	1850
Robbins, Joseph	Quincy, Ill.	1865
Roberts, A. C.	Fort Madison, Iowa	1871
Roberts, Deering J.	Hendersonville, Tenn.	1875
†Roberts, George C. M.	Baltimore, Md.	1847
Roberts, J. C.	Pulaski, Tenn.	1875
Robertson, W. S.	Muscatine, Iowa	1873
†Robinson, Lucius Gain [d.'58]	Detroit, Mich.	1856
†Robinson, Matthew Fullerton [d. 1874]	Newville, Pa.	1871
Robinson, P. Gervais	St. Louis, Mo.	1873
Robison, James D.	Wooster, Ohio	1850
†Roby, Joseph	Baltimore, Md.	1849
Rochester, Thomas F.	Buffalo, N. Y.	1860
Rockwell, C. V.	Taylorsville, Ill.	1873
†Roddey, F. W. [d. 1865]	Richmond, Va.	1852
Rodman, W. B.	Frankfort, Ky.	1875
†Rogers, Benjamin	Hartford, Conn.	1849

Rogers, Coleman	Louisville, Ky.	1875
Rogers, Henry R.	Dunkirk, N. Y.	1868
†Rogers, James B.	Philadelphia, Pa.	1847
Rogers, Joseph G.	Madison, Ind.	1867
†Rogers, J. Kearney	New York, N. Y.	1849
†Rogers, Lewis [d. 1875]	Louisville, Ky.	1859
Rooker, Jas. J.	Castleton, Ind.	1875
Rose, Landon C.	Laporte, Ind.	1853
Rosenfeld, Albert	Cincinnati, Ohio	1875
Rosenthal, Isaac M.	Fort Wayne, Ind.	1867
Roskoten, Robert	Peoria, Ill.	1874
Ross, B. B.	East Saginaw, Mich.	1874
Ross, Francis Armstrong	Mobile, Ala.	1869
Ross, John D.	Williamsburg, Pa.	1854
Ross, Jos. P.	Chicago, Ill.	1873
Ross, Wm. H.	Washington, D. C.	1875
Rouse, J. S.	South Saginaw, Mich.	1884
Rouse, W. H.	Detroit, Mich.	1874
†Rowan, B. G.	Fort Wayne, Ind.	1859
†Rublee, Chauncey M. [d. '69]	Montpelier, Vt.	1865
Rumbold, T. F.	St. Louis, Mo.	1874
Runyan, J. M.	Stockdale, Ind.	1874
Rupert, C. A.	Big Clear Creek, W. Va.	1875
Ruschenberger, W. S. W.	Philadelphia, Pa.	1850
Russell, John W.	New York, N. Y.	1860
Russell, Thos. P.	Oshkosh, Wis.	1873
†Rutherford, Wm. W. [d. '73]	Harrisburg, Pa.	1868
Ryerson, John G.	Boonton, N. J.	1874
Sabal, E. T.	Jacksonville, Fla.	1875
Sabin, Marden	Centreville, Mich.	1875
†Sachse, J. G.	Lancaster, Ohio	1850
Sager, Abram	Ann Arbor, Mich.	1856
†Sams, C. C. [d. 1865]	Hilsborough, Ohio	1852
†Sanborn, E. K.	Rutland, Vt.	1860
†Sanborn, Nathan	Henniker, N. H.	1850
Sanborn, Thomas	Newport, N. H.	1858
Sanders, Samuel F.	Good Hope, Ill.	1875
Sandt, John	Easton, Pa.	1870
Sanford, Leonard J.	New Haven, Conn.	1855
Sanford, Wm. F.	Brooklyn, N. Y.	1875

†Sargent, Henry	Worcester, Mass.	1855
†Sargent, J. F.	Concord, N. H.	1850
Satterlee, F. Leroy	New York, N. Y.	1872
Saunders, Wm. E.	Sherman, Texas	1875
Saunders, R.	Paducah, Ky.	1875
Sawyer, F. A.	Wareham, Mass.	1873
Sawyer, S. H.	Unionville, Iowa	1873
Sayre, David M.	Newton, N. J.	1860
Sayre, Lewis Albert, V. P.	New York, N. Y.	1848
Scarf, W. D.	Bellefontaine, Ohio	1873
Schauffler, E. W.	Kansas City, Mo.	1873
†Schenck, Ferdinand S. [d.'60]	Camden, N. J.	1847
Schenck, J. V.	Camden, N. J.	1858
†Schneck, B. F. [d. 1865]	Lebanon, Pa.	1857
†Scholfield, Edwin [d. 1871]	Philadelphia, Pa.	1864
Schnetzler, H. M.	Toledo, Ohio	1874
Schultz, S. S.	Danville, Pa.	1868
Scott, James M.	St. Louis, Mo.	1873
Scott, John	San Francisco, Cal.	1871
Scott, Wm.	Kokomo, Ind.	1875
Scott, X. C.	Cleveland, Ohio	1874
Seelye, Samuel Dibble	Montgomery, Ala.	1869
Seguin, Ed.	New York, N. Y.	1872
Seiler, Jeremiah	Harrisburg, Pa.	1870
Seiler, R. H.	Harrisburg, Pa.	1872
†Selden, Henry	Norfolk, Va.	1848
Sell, Edward H. M.	New York, N. Y.	1867
Senn, Nicholas	Milwaukee, Wis.	1873
Senseman, Hiram	Tremont, Ohio	1872
Severance, R. A.	Bellview, Ohio	1867
†Sewall, John G. [d. 1874]	New York, N. Y.	1870
†Sexton, H. G. [d. 1865]	Rushville, Ind.	1870
Sexton, Marshall	Rushville, Ind.	1874
Sexton, S.	New York, N. Y.	1873
†Seymour, George	Litchfield, Conn.	1858
Shank, R. J.	Lansing, Mich.	1874
†Shantz, Samuel E. [d. 1868]	Utica, N. Y.	1865
Sharpe, L. L.	Medford, N. J.	1873
Shattuck, J. W. M.	Columbus, Miss.	1873
Shaw, Thos. W.	Pittsburg, Pa.	1868
Sheldon, Chas. S.	Greenville, Mich.	1874

Sheller, Adam	Mt. Joy, Pa.	1856
Sherman, B. F.	Ogdensburg, N. Y.	1872
†Shipman, Azariah B. [d. '68]	Syracuse, N. Y.	1847
Shippen, Edward (U. S. N.)	Philadelphia, Pa.	1874
Shoemaker, J. M.	Napoleon, Ohio	1874
Shoemaker, T. J.	Morganfield, Ky.	1875
Shore, John	St. Louis, Mo.	1873
Shrady, Geo. F.	New York, N. Y.	1874
†Shumway, C. W.	Chicago, Ill.	1863
Shulse, Wm. H.	Lebanon, Ind.	1875
Shurley, E. L.	Detroit, Mich.	1874
Shurtleff, Geo. A.	Stockton, Cal.	1871
Silverthorn, L. L.	Charleston, Ill.	1873
Simmons, Gustavus L.	Sacramento, Cal.	1871
†Simonds, Joseph C.	New Orleans, La.	1849
†Simons, Lewis E.	Saxton's River, Vt.	1864
Simons, Manning	Charleston, S. C.	1870
†Simons, T. Y., V. P.	Charleston, S. C.	1857
Simpson, James	San Francisco, Cal.	1871
†Simpson, Josiah (U. S. A.) [d. 1874]	Baltimore, Md.	1853
Sims, P. D.	Chattanooga, Tenn.	1872
Sims, J. Marion, P.	New York, N. Y.	1874
Singleton, J. W.	Paducah, Ky.	1875
Skene, A. J. C.	Brooklyn, N. Y.	1872
Skillman, Henry Martyn	Lexington, Ky.	1859
†Skilton, Avery J.	Troy, N. Y.	1848
†Skinner, Alden [d. 1863]	Rockville, Conn.	1849
Skinner, Chas. J.	Somerset, Ohio	1872
Slocum, Chas. E.	Defiance, Ohio	1875
Small, A. V.	Trinidad, Col.	1874
Smith, A. J.	Wabash, Ind.	1874
†Smith, Amos C.	Medina C. H., Ohio	1854
Smith, Charles Gilman	Chicago, Ill.	1864
†Smith, Dryden [d. 1868]	Biddeford, Me.	1865
Smith, E. F.	St. Louis, Mo.	1873
Smith, E. N.	Susquehanna Depot, Pa.	1875
Smith, Eugene	Detroit, Mich.	1873
Smith, Jr., Francis Gurney, V.P.	Philadelphia, Pa.	1849
Smith, Gouverneur M.	New York, N. Y.	1858
Smith, G. W.	Hollidaysburg, Pa.	1872

Smith, H. E.	Detroit, Mich.	1874
†Smith, J. B.	Cincinnati, Ohio	1858
Smith, J. W.	Charles City, Iowa	1873
†Smith, James M.	Springfield, Mass.	1850
Smith, Jerome Candee	New York, N. Y.	1864
Smith, Joseph	Lexington, Ky.	1875
†Smith, Joseph Mather [d. '65]	New York, N. Y.	1847
Smith, Joseph R. (U. S. A.)	Ft. Monroe, Va.	1874
†Smith, Lyndon A., V.P. [d.'65]	Newark, N. J.	1847
†Smith, Moses B. [d. 1855]	Philadelphia, Pa.	1847
Smith, Nathan R.	Baltimore, Md.	1847
†Smith, Orrin [d. 1867]	Chicago, Ill.	1849
Smith, R. E.	Savannah, Mo.	1873
Smith, S. Hanbury	New York, N. Y.	1850
Smith, Samuel L. S.	Lancaster, Ky.	1874
Smith, Samuel P.	Cumberland, Md.	1849
Smith, S. P.	Prattsville, Ala.	1872
Smith, Thomas	Little Rock, Ark.	1875
†Smith, Thomas Mackie	Brandywine, Del.	1849
Smith, W. O.	Newport, Ky.	1873
Smythe, A. G.	Baldwin, Miss.	1874
†Sneed, William C.	Frankfort, Ky.	1859
Snodgrass, J. H.	Pittsburg, Pa.	1872
†Snow, A. B.	Boston, Mass.	1849
Snow, E. M.	Providence, R. I.	1873
Snow, E. S.	Dearbornville, Mich.	1875
†Snow, Simeon [d. 1865]	Root, N. Y.	1849
Snowden, S. Gustine	Franklin, Pa.	1870
Snowdon, J. W.	Waterford Works, N. J.	1872
Southard, Wm. B.	Kalamazoo, Mich.	1873
Southworth, Charles P.	Monroe, Mich.	1867
†Spalding, James [d. 1858]	Montpelier, Vt.	1849
Spaulding, Miles	Groton, Mass.	1849
Spencer, B. F.	Fulton, Ky.	1875
Spencer, Clark E.	Ft. Gratiot, Mich.	1874
Spencer, John	Westfield, N. Y.	1874
†Spencer, Pitman C. [d. 1860]	Petersburg, Va.	1852
†Spencer, Thomas D. [d. 1857]	Philadelphia, Pa.	1853
Spiegelhalter, Joseph	St. Louis, Mo.	1873
Spitler, Adam	Carthage, Ill.	1854
Spooner, Jared	Auburn, Ind.	1874

†Spooner, Paul	New Bedford, Mass.	1848
Spotswood, E. T.	Perrysville, Ind.	1873
Sprague, W. B.	Pavillion, N. Y.	1874
Squibb, Edward R.	Brooklyn, N. Y.	1860
†Staats, Barent P. [d. 1871]	Albany, N. Y.	1853
Stalnaker, J. W.	Austin, Texas	1875
Stanley, Elwood	Sandusky, Ohio	1871
†Stanton, David [d. 1871]	New Brighton, Pa.	1856
Staples, Franklin	Winona, Minn.	1871
Staples, Geo. M.	Dubuque, Iowa	1872
†Stearns, John [d. 1848]	New York, N. Y.	1847
†Stedman, Charles H. [d.1866]	Boston, Mass.	1848
Stedman, J. G. W.	St. Louis, Mo.	1873
Steele, A. J.	St. Louis, Mo.	1867
†Steele, E. A.	Marshall, Ill.	1863
Stein, Alex. W.	New York, N. Y.	1870
Steiner, Lewis H.	Frederick, Md.	1850
Steinreide, Joseph	Benton, Miss.	1870
†Stephenson, Mark	New York, N. Y.	1850
Stevens, Loman S.	Three Rivers, Mich.	1871
Stevens, M. B.	Byron, Mich.	1875
Stevens, Thaddeus M.	Indianapolis, Ind.	1867
†Steward, Joseph D. [d. 1854]	Philadelphia, Pa.	1847
Stewart, Edwin	Mendon, Mich.	1873
Stewart, Jas. A.	Baltimore, Md.	1872
Stewart, Peter	Detroit, Mich.	1874
†Stewart, Philander [d. 1874]	Peekskill, N. Y.	1853
Stillé, Alfred, S., P.	Philadelphia, Pa.	1847
†Stillé, Moreton [d. 1855]	Philadelphia, Pa.	1853
Stillwell, Jos. A.	Brownstown, Ind.	1875
Stinchfield, A. W.	Eyota, Minn.	1875
Stockwell, Cyrus M.	Port Huron, Mich.	1856
†Stone, James W.	Boston, Mass.	1850
†Stone, John O. [d. 1868]	New York, N. Y.	1853
†Stone, Joseph [d. 1849]	Hardwick, Mass.	1849
†Stone, Warren, Sr., V. P. [d. 1872]	New Orleans, La.	1869
Storer, D. Humphreys, V.P., P.	Boston, Mass.	1849
Stormont, D. W.	Topeka, Kansas.	1858
Stout, Arthur B.	San Francisco, Cal.	1871
Stratford, A.	Indianapolis, Ind.	1875

Strong, H. P.	Beloit, Wis.	1873
Stuart, A. B.	Winona, Minn.	1870
†Studdiford, J. Henry [d. '70]	Lambertville, N. J.	1866
Sullivan, John C.	Cairo, Ill.	1873
Sullivan, John L.	Malden, Mass.	1865
Sullivan, O. H.	Indianapolis, Ind.	1873
†Sumner, George	Hartford, Conn.	1847
Sumpter, J. A.	Pulaski, Tenn.	1875
Sutton, George	Aurora, Ind.	1856
Sutton, W. E.	Aurora, Ind.	1875
Swartz, Joseph	Duncannon, Pa.	1866
†Swayne, Caleb [d. 1860]	London Grove, Pa.	1859
†Swett, John A.	New York, N. Y.	1847
Swett, John L.	Newport, N. H.	1864
Sykes W. H.	Plymouth, Ohio	1874
†Taft, Marcus L. [d. 1850]	New York, N. Y.	1849
Talcott, Alvan	Guilford, Conn.	1874
†Taliaferro, W. I. [d. 1871]	Cincinnati, Ohio	1850
Talley, A. N.	Columbia, S. C.	1858
Taylor, A. B.	Kansas City, Mo.	1873
Taylor, Charles Fayette	New York, N. Y.	1866
Taylor, H.	Winchester, Ky.	1875
Taylor, H. Genet	Camden, N. J.	1870
Taylor, J. M.	Corinth, Miss.	1873
Taylor, M. A.	Austin, Texas	1874
†Taylor, Othniel H. [d. 1869]	Camden, N. J.	1847
Taylor, Thos. W.	Henderson, Ky.	1875
†Taylor, William [d. 1865]	Manlius, N. Y.	1853
Taylor, Wm. Terry	Philadelphia, Pa.	1869
†Teackle, John N.	Baltimore, Md.	1848
Tefft, Jonathan E.	Springfield, Mo.	1873
Tefft, Lake Innocent	Syracuse, N. Y.	1847
Tellkampt, Theodore A.	New York, N. Y.	1855
†Tenbroeck, S. B.	Paris, Ill.	1867
Thayer, A. H.	Grafton, West Va.	1870
†Theobald, Elisha W.	Baltimore, Md.	1848
†Thomas, Geo. W. [d. 1848]	Norristown, Pa.	1847
Thomas, J. D.	Pittsburg, Pa.	1873
Thomas, J. P.	Pembroke, Ky.	1875
†Thomas, John M. [d. 1853]	Georgetown, D. C.	1848

Thomas, Richard C.	Bowling Green, Ky.	1875
†Thomas, Richard H.	Baltimore, Md.	1848
†Thomas, Robert P. [d. 1864]	Philadelphia, Pa.	1855
Thomason, T. J.	Perrineville, N. J.	1860
Thompson, A. A.	Lansing, Mich.	1874
Thompson, A. G.	Islip, N. Y.	1872
Thompson, Albert	South Haven, Mich.	1874
Thompson, J. Ford	Washington, D. C.	1866
†Thompson, James	Northampton, Mass.	1856
Thompson, John W.	Paducah, Ky.	1875
Thompson, Pinckney	Henderson, Ky.	1875
Thompson, R. E.	Muscatine, Iowa	1873
†Thompson, Rezin [d. 1871]	Nashville, Tenn.	1869
†Thompson, Robert [d. 1865]	Columbus, Ohio	1850
†Thompson, Samuel [d. 1872]	Albion, Ill.	1850
Thompson, Sydney	Spruce Creek, Pa.	1874
Thoms, Wm. Faulds	New York, N. Y.	1867
Thomson, D. D.	Paducah, Ky.	1875
†Thomson, Horatio	Belchertown, Mass.	1860
Thorn, Samuel S.	Toledo, Ohio	1874
Thorne, Wm.	Hastings, Minn.	1870
Thornton, S. C.	Moorestown, N. J.	1872
Thornton, T. F.	Sturgis, Mich.	1875
Thrall, Seneca B.	Ottumwa, Iowa	1871
†Thweatt, J. J. [d. 1868]	Petersburg, Va.	1852
Titcomb, B.	Baltimore, Md.	1868
Tipton, Jos. S.	Hillsville, Va.	1875
Titus, Isaac Sutven	Stockton, Cal.	1871
Tobie, E.	Buffalo, N. Y.	1863
Todd, A. S.	Wheeling, W. Va.	1870
Todd, Chas. A.	St. Louis, Mo.	1873
Todd, Chas. H.	Owensboro', Ky.	1875
Todd, Francis W.	Stockton, Cal.	1871
Todd, Jas. John	Pittsburgh, Pa.	1875
Todd, L. Beecher	Lexington, Ky.	1859
Todd, L. L.	Paris, Ill.	1872
Todd, Orrin D.	Eminence, Ky.	1872
Todd, R. N.	Indianapolis, Ind.	1867
Todd, S. S.	Kansas City, Mo.	1873
Tomlinson, S. C.	Indianapolis, Ind.	1873
Toner, Joseph Meredith, P.	Washington, D. C.	1864

Topping, G. W.	DeWitt, Mich.	1872
Torrey, W. O.	Brookfield, Mo.	1873
Townsend, G. J.	South Natick, Mass.	1870
†Townsend, Howard [d. '67]	Albany, N. Y.	1858
Townsend, J. H.	Edgarton, Ohio	1867
Townsend, Ralph M.	Philadelphia, Pa.	1872
Trader, John W.	Sedalia, Mo.	1873
Traver, Wm. H.	Providence, R. I.	1865
Travers, E. R.	Amboy, Ill.	1874
Treichler, J. F.	McKeansburg, Pa.	1872
†Trenor, Jr., Jno. [d. '67]	New York, N. Y.	1852
†Trigg, Daniel	Abingdon, Va.	1847
†Tripler, Chas. S., V. P. [d. '66]	United States Army	1850
Triplett, W. H.	Washington, D. C.	1875
Tucker, Chester S.	Coldwater, Mich.	1875
Tucker, George G.	Westfield, Mass.	1853
Tupper, Horace	Bay City, Mich.	1875
Turnbull, Laurence	Philadelphia, Pa.	1852
†Tweed, T. M.	Eckmansville, Ohio	1850
†Twitchell, Amos	Keene, N. H.	1849
Tyler, C. V.	Bay City, Mich.	1875
†Tyler, Samuel [d. '56]	Frederick, Md.	1847
Tyrrell, Gerhard G.	Sacramento, Cal.	1871
†Uhler, John [d. 1856]	Philadelphia, Pa.	1847
Uhler, John R.	Baltimore, Md.	1866
Ulrich, Wm. B.	Chester, Pa.	1875
†Underhill, Alfred [d. 1873]	New York, N. Y.	1860
Underhill, J. W.	Cincinnati, Ohio	1875
†Upshur, George L.	Norfolk, Va.	1848
Van Bibber, W. Chew	Baltimore, Md.	1865
†Van Buren, Peter [d. 1874]	New York, N. Y.	1852
Vance, Reuben A.	New York, N. Y.	1874
Van Deman, J. H.	Chattanooga, Tenn.	1874
Vanderpool, S. Oakley	New York, N. Y.	1853
Vandervoort, John L.	New York, N. Y.	1864
Van Deusen, Harmon	Mineral Point, Wis.	1853
Van Horn, A. K.	Jerseyville, Ill.	1873
Van Kirk, T. R.	McKeysport, Pa.	1874

Vanvoorhis, J. S.	Bellevernon, Pa.	1872
Van Zandt, Wm.	St. Louis, Mo.	1873
Varick, Theodore R.	Jersey City, N. J.	1853
Vaughan, B. A.	Columbus, Miss.	1872
Vincent, H. C.	Gilford, Ind.	1875
Vinnedge, W. W.	Lafayette, Ind.	1873
Von Don Hoff, Edward	Louisville, Ky.	1874
†Wade, T. A.	Brooklyn, N. Y.	1855
Wadsworth, J. L. R.	Collinsville, Ill.	1873
Wainwright, W. A. M.	Hartford, Conn.	1873
†Walker, Isaac R.	Spread Eagle, Pa.	1848
Walker, J.	Bethany, Mo.	1873
Walker, J. C.	Indianapolis, Ind.	1875
Walker, Jerome	Brooklyn, N. Y.	1872
Walker, H. O.	Detroit, Mich.	1874
Wall, David	Clermont, Ind.	1873
Wallace, D. R.	Waco, Texas	1873
Walling, Willoughby	Louisville, Ky.	1873
Walsh, John Kearney	Washington, D. C.	1869
Walsh, Joseph	Washington, D. C.	1870
Walsh, Ralph L. S.	Washington, D. C.	1870
Walton, M. W.	Ridott, Ill.	1872
Wardner, Horace	Cairo, Ill.	1869
†Ware, John	Boston, Mass.	1848
Warner, Levi F., V. P.	Boston, Mass.	1873
†Warner, Richard	Cromwell, Conn.	1848
†Warren, John C., V. P., P. [d. 1856]	Boston, Mass.	1848
†Warren, J. E.	Cumberland, R. I.	1856
†Warren, J. Mason [d. 1867]	Boston, Mass.	1849
†Washburn, Cyrus [d. 1860]	Vernon, Vt.	1849
Waterhouse, M.	Portage City, Wis.	1874
Waterman, Luther D.	Indianapolis, Ind.	1870
Watkins, Claibourne	Little Rock, Ark.	1869
Watkins, S. S.	Owensboro', Ky.	1875
†Watson, A. A. [d. 1868]	Boston, Mass.	1849
Watson, B. A.	Jersey City, N. J.	1872
†Watson, John	New York, N. Y.	1847
†Watson, John M.	Nashville, Tenn.	1857

†Watts, Robert [d. 1867]	New York, N. Y.	1847
Webb, Nathan	Ypsilanti, Mich.	1874
†Webb, Reynold	Madison, Conn.	1849
Webb, W. W.	Wellsboro', Pa.	1872
Webster, J. R.	Monmouth, Ill.	1873
Weisse, Faneuil D.	New York, N. Y.	1872
†Welburn, John C. [d. 1857]	Frankford, Mo.	1854
†Welch, Archibald	Hartford, Conn.	1848
Welch, W. B.	Boonsboro', Ark.	1873
Welch, Wm. M.	Philadelphia, Pa.	1872
†Wellford, Beverly R., V. P., P. [d. 1870]	Richmond, Va.	1847
†Wellington, Timothy	West Cambridge, Mass.	1850
Wells, Geo. W.	Yonkers, N. Y.	1872
Wells, Ira R.	Geneseo, Ill.	1873
Wells, Wm. Lehman	Philadelphia, Pa.	1866
†West, Calvin, V. P.	Hagerstown, Ind.	1857
†West, Francis, S. [d. 1868]	Philadelphia, Pa.	1847
West, M. Calvin	Rome, N. Y.	1864
†West, Silas [d. 1859]	Binghamton, N. Y.	1856
Westmoreland, W. F.	Atlanta, Ga.	1872
Wey, William C.	Elmira, N. Y.	1864
Whann, W. Lowrie	Franklin, Pa.	1873
†Wheatland, Richard H.	Salem, Mass.	1858
Wheeler, James H.	Dover, N. H.	1872
Whelan, A. F.	Hillsdale, Mich.	1874
Whitbeck, John F.	Rochester, N. Y.	1864
White, J. S.	Memphis, Tenn.	1859
White, James P.	Buffalo, N. Y.	1849
White, John Buell	Saginaw, Mich.	1856
White, John L.	Bloomington, Ill.	1873
†White, S. N. C.	Pooleville, Md.	1858
†White, Vassal	Curtisville P. O., Mass.	1853
White, William T.	New York, N. Y.	1866
Whitehead, P. F.	Vicksburg, Miss.	1875
Whitehill, Jas. C.	St. Louis, Mo.	1873
Whiting, J. B.	Janesville, Wis.	1874
†Whitridge, Wm. C. [d. 1857]	New Bedford, Tenn.	1853
†Whitney, Simon	Framingham, Mass.	1842
†Wiesel, H. J. [d. 1873]	Wheeling, W. Va.	1870

Wight, E. M.	Chattanooga, Tenn.	1873
Wilbur, C. T.	Jacksonville, Ill.	1873
†Wilcox, Charles H.	Buffalo, N. Y.	1853
Wilcox, Lucian Sumner	Hartford, Conn.	1860
†Wilder, Charles W.	Leominster, Mass.	1850
Wilder, F. M.	Chicago, Ill.	1874
†Wiley, Adams	Roxbury, Mass.	1853
†Wiley, Penrose [d. 1874]	Leesport, Pa.	1828
†Willard, Augustus [d. 1868]	Green, N. Y.	1847
Willard, E. R.	Wilmington, Ill.	1872
†Willard, Henry	Boston, Mass.	1855
†Willard, Sylvester D. [d. '65]	Albany, N. Y.	1860
Williams, Amer S.	Fostoria, Ohio	1867
†Williams, Isaac C. [d. 1868]	Bloomington, Ohio	1855
Williams, J. S.	Otter Creek, Ill.	1873
Williams, Lewis	Pomfret, Conn.	1855
Williams, Louis	Marion, Ind.	1867
Williams, P. C.	Baltimore, Md.	1867
†Williams, Stephen W.	Deerfield, Mass.	1847
Williams, William H.	Brooklyn, N. Y.	1860
Williamson, Jefferson	Ottumwa, Iowa	1871
Willien, L. J.	Terre Haute, Ind.	1874
†Willis, Isaac P.	Royalston, Mass.	1860
Willis, J. M.	Waco, Texas	1875
Willis, S. W.	Pine Grove, Ky.	1875
Wilson, F. C.	Louisville, Ky.	1873
Wilson, J. T.	Weston, Mo.	1873
Wilson, Jas. C.	Flint, Mich.	1874
†Wilson, James F. [d. 1868]	Wilmington, Del.	1849
Wilson, Joseph (U. S. N.)	Chelsea, Mass.	1875
Wilson, M. V.	Medora, Ind.	1875
†Wilson, Myron W.	Hartford, Conn.	1855
†Wiltbank, John [d. 1860]	Philadelphia, Pa.	1847
Winans, Isaac	New Brighton, Pa.	1873
†Wing, Joel A. [d. 1852]	Albany, N. Y.	1847
Winston, Gustavus S.	New York, N. Y.	1865
†Winton, Nelson [d. 1864]	Havana, N. Y.	1853
Wise, T. N.	Covington, Ky.	1867
Wister, Caspar, T.	Philadelphia, Pa.	1852
Withers, Thomas	Petersburg, Va.	1860

†Witherwax, John M. [d. '69]	Davenport, Iowa	1850
Witter, G. F.	Grand Rapids, Mich.	1873
†Witter, William	Williamantic, Conn.	1849
Wolcott, Samuel G.	Utica, N. Y.	1866
Wood, A. C.	Owensboro', Ky.	1875
Wood, C. H.	West Bloomfield, Mich.	1874
Wood, Charles S.	New York, N. Y.	1867
Wood, E. A.	Pittsburg, Pa.	1870
Wood, George B., P.	Philadelphia, Pa.	1847
Wood, Jr., H. C.	Philadelphia, Pa.	1872
Wood, H. D.	Angola, Ind.	1874
†Wood, Isaac, T. [d. 1868]	New York, N. Y.	1849
Wood, James R.	New York, N. Y.	1847
†Wood, R. C.	U. S. Army	1858
Woodbridge, John Elliott	Youngstown, Ohio	1869
Woodburn, J. H.	Indianapolis, Ind.	1873
†Woodbury, Peter P.	Bedford, N. H.	1848
Woodman, L. C.	South Haven, Mich.	1874
Woods, J. T.	Toledo, Ohio	1874
Woodson, J. B.	Kansas City, Mo.	1873
Woodward, Adrian T.	Brandon, Vt.	1853
Woodward, Ashbel	Franklin, Conn.	1849
†Woodward, Charles [d. 1874]	Cincinnati, Ohio	1850
Woodward, Joseph Janvier (U. S. A.), V. P.	Washington, D. C.	1865
Woodworth, Benjamin Studley	Fort Wayne, Ind.	1856
Woodworth, John M.	Washington, D. C.	1873
Work, J. A.	Elkhart, Ind.	1874
Worthington, Joshua H.	Philadelphia, Pa.	1872
†Worthington, Wilmer [d. '74]	West Chester, Pa.	1848
Wright, C. H.	North Madison, Ind.	1875
Wright, John	Clinton, Ill.	1867
Wright, M. B.	Cincinnati, Ohio	1875
Wright, W. T.	Good Hope, Ill.	1873
Wyckoff, C. C.	Buffalo, N. Y.	1863
Wylie, A. N.	Ripley, Ohio	1867
Yandell, D. W., V. P., P.	Louisville, Ky.	1850
Yandell, L. P.	Louisville, Ky.	1848
Yandell, Jr., Lumsford Pitt	Louisville, Ky.	1869

†Yardley, Thomas H. [d. '60]	Philadelphia, Pa.	1847
†Yeager, Theodore C. [d. '74]	Allentown, Pa.	1865
†Yearby, George T. [d. 1865]	Eastville, Va.	1852
Young, Theodore J.	Titusville, Pa.	1874
Youngblood, J. M.	St. Louis, Mo.	1873
Zeigler, George J.	Philadelphia, Pa.	1853

INDEX.

Acid, salicylic, 114
Address in medicine, 111
  in obstetrics, etc., 173
  in State medicine, 301
  of president, 65
Advances in materia medica, 115
Alcohol in pneumonia, 104
  in the system, 112
Anæmia, spinal, 255
Andrews, Dr. E., results of operations in Lake States, etc., 247
Atmosphere, influence on bowel affections, 125
Atkinson, Dr. Thos. P., notice of, 475
Auscultation of the œsophagus, 283

Bartholow, Dr. R., exophthalmic goitre, 145
Bell, Dr. A. N., hemlock poisoning, 345
Benzoate of lithia, 115
Bibb, Dr. G. R., notice of, 455
Bioplasson doctrine, 157
Bladder, exstrophy of, 224, 275
Blaney, Dr. J. V. Z., notice of, 456
Bloodletting, 421
Bowditch, Dr. H. I., address in State medicine, 301
  Dr. H. P., plan for records, etc., 342
Bowling, Dr. W. K., address of, 65
Brain, motor centres in, 115
Byford, Dr. W. H., address in obstetrics, 173
By-laws, 487

Calculi, renal, 225, 279
Casselberry, Dr. Isaac, notice of, 463
Catalogue of library, 57
Cholera infantum, causes of, 89
Climatology of Florida, 391
  of Minnesota, 297, 371
  of Nebraska, 357
Clinical records, necessity for, 125
Clopton, Dr. Thos. C., notice of, 478
Cloudy days, effect of, 298
Code of ethics, 499
Consumptives, altitude, etc. for, 299
Cooper, Dr. Richard M., notice of, 469
Corpuscles, blood, enumeration of, 111
Council, national health, 301
Crime, natural history of, 121
Cross, Dr. Jos., notice of, 471
Cystic degeneration of kidneys, 133

Davis, Dr. N. S., on clinical records, etc., 125
De Bruler, Dr. Jas. P., notice of, 465
Defective drainage, 294
Diarrhœa, how caused, 89
Discussion on spinal anæmia, 269
Doses, etc., 97
Dougherty, Dr. B. A., notice of, 468
Drainage, defective, 294
Dulin, Dr. Alex. F., notice of, 467

Elsberg, Dr. L., bioplasson doctrine, 157
  on auscultation of the œsophagus, 283
Enemata, nutritive, 119
Enumeration of blood corpuscles, 111
Ergot in fibroids of uterus, 173
  modes of using, 187
  preparations of, 189
Ethics, code of, 499
Exophthalmic goitre, 100, 145
Exstrophy of bladder, 224, 275

Fairchild, Dr. R. F. W., notice of, 469
Fever, water in, 116
Fibrous tumors, ergot in, 173
Flint, Dr. Austin, address in medicine, 111
Floating hospitals, 294
Florida, climatology of, 297, 391
Fluxes, how caused, 89, *et seq.*
Fry, Dr. Thos. W., notice of, 464

Gastric ulcer treated by enemata, 119
Genital irritation causing spinal anæmia, 221, 255
Germ theory, 116
Gillespie, Dr. Wm. A., notice of, 477
Goitre, exophthalmic, 100, 145
Gross, Dr. S. D., venesection, 421

Hamman, Dr. Jas., notice of, 467
Hance, Dr. Edmund, notice of, 469
Hand, Dr. D. W., diseases of Minnesota, 371

Health council, national, 301
Heat in the production of fluxes, 89
Hemlock poisoning, 296, 345
Herniotomy, results of, 248
Holston, Dr. J. G. F., notice of, 454
Hydro-nephritis, etc., 225, 279

Inloes, Dr. H. A., notice of, 466

Jaborandi, 114
Judicial council, minutes of, 81

Keidel, Dr. Geo., notice of, 467
Kidneys, cystic degeneration of, 133
King, Dr. C. B., exstrophy of the bladder, 275
Kirkbride, Dr. S. B., notice of, 471

Legislation against syphilis, 226, 232
  sanitary, in Massachusetts, 315
Librarian's report, 55
Library, catalogue of, 57
Lithia, benzoate of, 115

McCord, Dr. D. C., notice of, 460
Mackall, Dr. Richard, notice of, 468
Major amputations, results of, 249
Massachusetts, sanitary legislation in, 315
Materia medica, advances in, 115
Medicine, address in, 111
Members, permanent, 523
Memoir of Dr. Geo. Mendenhall, 447
  of Dr. Henry Miller, 441
Mendenhall, Dr. Geo., memoir of, 447
Miller, Dr. Henry, memoir of, 441
Minnesota, climatology of, 297, 371
Minutes of section on obstetrics, etc., 171
  on practice, etc., 89
  on State medicine, 293
  on surgery, 221
Minutes of twenty-sixth meeting, 9
  address of welcome, 9
  programme, 11
  list of delegates, etc., 11
  members by invitation, 25, 26
  address of Dr. Botsford, 25
  president's address, 26
  letter from v. p. Dr. Brown, 26
  papers, etc., 27
  committee on nominations, 28
  report of judicial council, 29
  papers, etc., 29
  Canadian Medical Association, 30
  report of Dr. Segnin, 31
  Dr. Gross on one of the lost arts, 32
  report on rank in army, 32
  address in medicine, 34
  report on International Medical Association, 34
  on medal, 35
  resolution on Dr. J. D. Jackson, 36
  papers, etc., 36
Minutes of twenty-sixth meeting—
  invitation from Social Science Association, 37
  resolution on Dr. Lewis Rogers, 37
  memorial on Dr. E. M. Curtis, 37
  invitation to Philadelphia, 39
  report of committee of publication, 39
  of treasurer, 40
  of librarian, 40
  McDowell memorial, 40
  circular of Centennial Medical Commission, 41
  address in surgery, 43
  report of judicial council, 43
  address in obstetrics, 44
  papers, etc., 44
  resolution on funds, 45
  report on Canadian invitation, 45
  committee on same, 45
  resolution on ozone, 45
  delegates abroad, 45
  amendment to by-laws, 46
  officers, etc., for 1876, 46
  trustees of McDowell fund, 49
  report on prize essays, 49
  committee of experts, 49
  address in State medicine, 49
  resolutions on State boards of health, 50
  on Dr. McNaughton, 50
  committee on rank in army, 50
  resolution for Georgia State Medical Society, 50
  additions to committee on syphilis, 51
  "thanks", 51, 52
  amendments postponed, 52
  adjournment, 52
Modes of using ergot, 187
Morgan, Dr. Gerard E., notice of, 468
Motor centres, 113

National health council, 301
Natural history of crime, 121
Nebraska, climatology of, 297, 357
Necessity for clinical records, etc., 125
Necrology, report on, 453
Neuralgia, atmospheric changes in, 89
Notice of Dr. Thos. P. Atkinson, 465
  of Dr. G. R. Bibb, 455
  of Dr. J. V. Z. Blaney, 456
  of Dr. Isaac Casselberry, 463
  of Dr. Thos. C. Clopton, 478
  of Dr. R. M. Cooper, 469
  of Dr. J. Cross, 471
  of Dr. J. P. De Bruler, 465
  of Dr. B. A. Dougherty, 468
  of Dr. A. F. Dulin, 467
  of Dr. R. F. W. Fairchild, 469
  of Dr. F. W. Fry, 464
  of Dr. Wm. A. Gillespie, 477
  of Dr. Jas. Haman, 467
  of Dr. E. Hance, 469

Notice—
of Dr. J. G. F. Holston, 454
of Dr. H. A. Inloes, 466
of Dr. Geo. Keidel, 467
of Dr. S. B. Kirkbride, 471
of Dr. D. O. McCord, 460
of Dr. R. Mackall, 468
of Dr. G. E. Morgan, 468
of Dr. D. A. O'Donnell, 466
of Dr. Wm. Owens, 476
of Dr. John T. Ray, 471
of Dr. J. Riley, 453
of Dr. Jos. M. Rotzell, 469
of Dr. J. H. Slack, 471
of Dr. R. S. Smith, 470
of Dr. J. E. Spencer, 470
of Dr. F. T. Stribling, 473
of Dr. G. B. Todd, 466
of Dr. Jas. R. Washington, 469
of Dr. F. M. Wright, 470
of Dr. D. W. Young, 461
Nutrition by enemata, 119

Obstetrics, address in, 173
Octerlony, Dr. J. A., cystic degeneration of kidneys, 133
O'Donnell, Dr. D. A., notice of, 466
Œsophageal auscultation, 283
Officers, 515
Ordinances, 493
Organization, plan of, 482
Ovarian tapping, 287
Owens, Dr. Wm., notice of, 476

Paralysis from genital irritation, 221
Peabody, Dr. J. H., climatology, etc. of Nebraska, 357
Permanent members, 523
Pigmentation, 171, 195
Plan of organization, 482
Pneumonia, 104
Poisoning by hemlock, 296, 345
Preparations of ergot, 189
President's address, 65

Ray, Dr. John T., notice of, 471
Renal calculi, 225, 279
Report of librarian, 55
of treasurer, 54
on necrology, 453
on ventilation, 381
Results of operations, etc., 247
Riley, Dr. Joshua, notice of, 453
Rotzell, Dr. Jos. M., notice of, 469

Salicylic acid, 114
Sanitary legislation in Massachusetts, 315
Sayre, Dr. L. A., on spinal anæmia, 255
Seguin's thermoscope, 229
Sell, Dr. E. H. M., ovarian tapping, 287
Slack, Dr. J. H., notice of, 471
Smith, Dr. Robert S., notice of, 470
Spencer, Dr. John E., notice of, 470
Sphygmograph, a new, 109
Spinal anæmia, 255
State medicine and public hygiene, 319
Statement of volumes, 53
Stribling, Dr. F. T., notice of, 473
Syphilis, legislation against, 226, 232

Thermoscope, 229
Todd, Dr. Geo. B., notice of, 466
Transfusion, 117
Treasurer's report, 54

Ulcer, gastric, treated by enemata, 119
Uterus, ergot in fibrous tumors of, 173

Venesection, 421
Ventilation, report on, 381
Volumes on hand, 53

Wall, Dr. J. P., climatology of Florida, 391
Washington, Dr. Jas. R., notice of, 469
Water in fever, 116
Willien, Dr. L. J., on hydro-nephritis, 279
Wright, Dr. F. M., notice of, 470
Wright, Dr. M. B., on pigmentation, 195

Young, Dr. Delos W., notice of, 461

SHELF No. ....

BOSTON PUBLIC LIBRARY.

Central Department, Boylston Street.

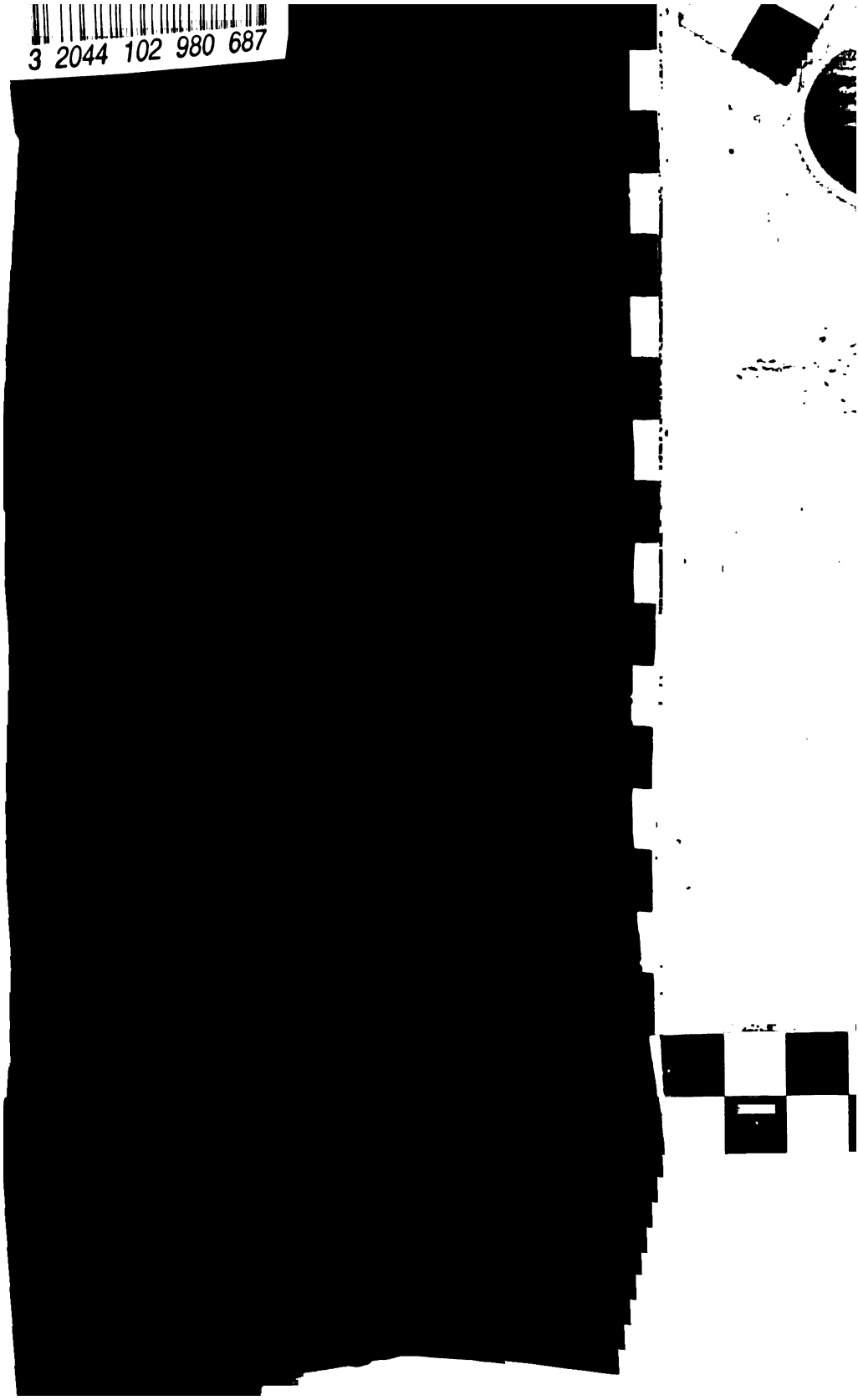
One volume allowed at a time, and obtained only by card; to be kept ~~14~~ 7 days without fine; to be renewed only before incurring the fine; to be reclaimed by messenger after 21 days, who will collect 20 cents, beside fine of 2 cents a day, including Sundays and holidays; not to be lent out of the borrower's household, and not to be kept by transfers more than one month; to be returned at this Hall.

Borrowers finding this book mutilated or unwarrantably defaced, are expected to report it; and also any undue delay in the delivery of books.

***No claim can be established because of the failure of any notice, to or from the Library, through the mail.

The record below must not be made or altered by borrower.

12/26			

3 2044 102 980 68

3 2044 102 980 687